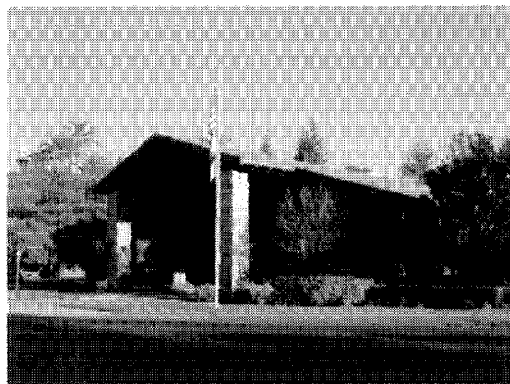
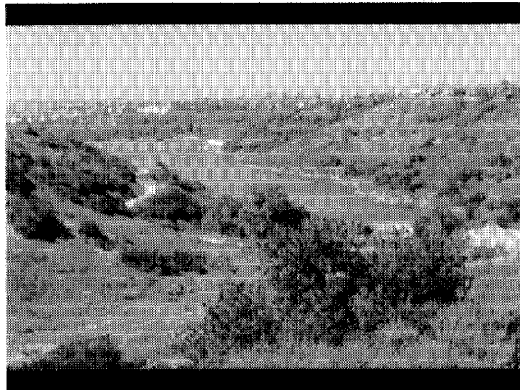
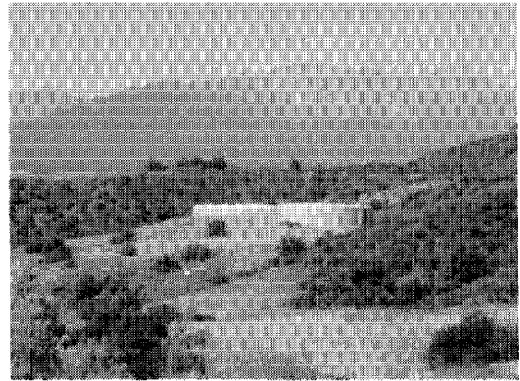
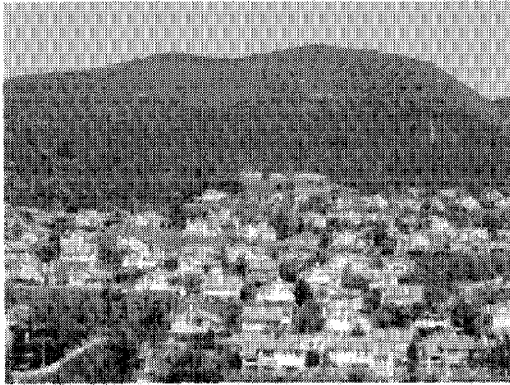
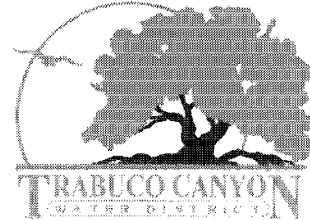


TRABUCO CANYON WATER DISTRICT

2005 URBAN WATER MANAGEMENT PLAN



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ABBREVIATIONS AND ACRONYMS

“AF/Y” means acre foot(feet) per year

“AMP” means the Allen-McColloch Pipeline

“BMP” means Best Management Practices

“CERP” means the Conservation Encouragement Rate Program

“CUWCC” means California Urban Water Conservation Council

“District” means the Trabuco Canyon Water District

“DMM” means Demand Management Measures

“DWR” means Department of Water Resources

“ETo” means evapotranspiration rate

“GPD” means gallons per day

“Master Plan” means the Trabuco Canyon Water District Final Water, Wastewater and Reclaimed Water Master Plan, December 1999

“MET” means Metropolitan Water District of Southern California

“MGD” means one million gallons per day

“MWDOC” means Municipal Water District of Orange County

“MOU” means Memorandum of Understanding

“Plan” means the Urban Water Management Plan

“RDMD” means the County of Orange Resources and Development Management Department

“RRWRP” means the Trabuco Canyon Water District Robinson Ranch Wastewater Reclamation Plant

“RUWM” means the Metropolitan Water District of Southern California’s Regional Urban Water Management Plan

“SAMP” means Sub-Area Master Plan

“TCWD” means the Trabuco Canyon Water District

“UWMP” means the Urban Water Management Plan

“WSCP” means Trabuco Canyon Water District’s Water Shortage Contingency Plan

“WSDM Plan” means Metropolitan Water District of Southern California’s Water Surplus and Drought Management Plan

“WTP” means Trabuco Canyon Water District’s Water Treatment Plant

EXECUTIVE SUMMARY

Background and Purpose

The Trabuco Canyon Water District serves an estimated population of 13,665 in the City of Rancho Santa Margarita and an unincorporated area of Orange County; specifically the communities of Dove Canyon, Rancho Cielo, Robinson Ranch, Santiago Estates, Trabuco Highlands, Walden, Fieldstone, a section of Portola Hills, and Trabuco Canyon. The District was organized on February 26, 1962 under Division XII of the California Water Code and is governed by an elected, five-member Board of Directors. Currently, the District supplies approximately 3,700 acre-feet of potable water through imported wholesale water supplies and local groundwater. The District also provides wastewater, reclaimed water, and recycled water service to major communities within the District's service area.

Enacted in 1983, the Urban Water Management Planning Act requires every urban water supplier providing water to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually to prepare and adopt an Urban Water Management Plan (Plan) every five years. The Plan requires evaluation of water demand and water supplies to meet current and future growth within the District's service area. Furthermore the Plan requires an evaluation of the reliability of water supply during periods of single dry water years and periods with multiple dry water years. Because the majority of the District's water supply is imported water purchased from the Municipal Water District of Orange County (MWDOC), the water wholesaler in the area, a significant amount of pertinent data and information in this Plan was drawn from MWDOC's 2005 Urban Water Management Plan. In addition, the Plan also addresses Best Management Practices with methods for conservation, water shortage contingency planning, water quality, and reliability.

For the District, the benefits of updating its Urban Water Management Plan extend beyond legislative compliance. These benefits include the document being used as a:

- Long-range planning document for water supply and reliability
- Foundation document and source of information for Water Supply Assessments (Water Code 10613)
- Source of data for development of a regional water plan
- Reference source document for the City of Rancho Santa Margarita and County of Orange to update their General Plans
- Planning document for property owners and developers considering new projects
- Key component to assist in preparation of Integrated Regional Water Management Plans

Section Summaries and Key Findings

District staff and its consulting engineering firm of Brown and Caldwell prepared the 2005 Urban Water Management Plan during the summer and fall of 2005. A

summary of the major sections of the Plan and the key findings are presented in the sections that follow.

Service Area and Facilities

Trabuco Canyon Water District is located in the southeastern portion of Orange County at the foothills of the Santa Ana Mountains and encompasses approximately 9,100 acres. The terrain within the District can vary from steep hills and canyons to gentle terrain and rolling hills. Elevations within the District range from approximately 900 feet above mean sea level in the lower Aliso Creek area and the southern area of Dove Canyon, to nearly 2,400 feet in the northeasterly portion of the District adjacent to the Cleveland National Forest.

The District currently serves an estimated 3,993 retail water connections and provides sewer service to 3,538 dwelling units. Population is projected to be 17,990 at build out, which is anticipated to occur in 2030. The District's major facilities include the Dimension Water Treatment Plant, the Robinson Ranch Wastewater Reclamation Plant and Reservoir, Dove Lake, Rose Canyon Well, and Lang Well. Trabuco Canyon Water District delivers potable water through its pressurized water system consisting of approximately 56 miles of pipelines and nine primary pressure zones. The District's sources of supply are the V.P. Baker Aqueduct that provides untreated water to the District's Dimension Water Treatment Plant (WTP), local groundwater, and the Antonio Water Delivery System, which is supplied from the Allen-McColloch (AMP) Pipeline. The District's system is interconnected with adjacent agencies including Santa Margarita Water District, Irvine Ranch Water District, Santiago County Water District, and El Toro Water District to provide reliability and redundancy.

Water Use and Water Supply

Trabuco Canyon Water District has a variety of water supply sources, including imported wholesale water supplies, groundwater, and recycled water. Within the District, recycled water is reused for landscape irrigation. Table ES-1 shows the projected water demand for normal water years and the water supply source. The water demand values shown are based on billing records, population growth, future developments, and water use factors.

Table ES-1 Water Demand and Supplies (Normal Water Years) – AF/Y						
Water Supply Sources	2005	2010	2015	2020	2025	2030
Domestic Water System (Potable Water)						
Imported Water (MWD of Orange County)	3,281	4,542	4,818	5,058	5,268	5,400
Local Groundwater Supplies	400	238	238	238	238	238
Recycled Water System (Non-Potable Water)	850	956	1,000	1,000	1,000	1,000
Total	4,531	5,736	6,056	6,296	6,506	6,638

Capacity wise, the District has a total purchased annual capacity of 7,240 acre-feet of wholesale water supply consisting of 4,340 acre feet per year (AF/Y) in the V.P. Baker Aqueduct and 2,900 AF/Y in the AMP. The V.P. Baker Aqueduct conveys untreated water to the District's Dimension WTP and the AMP supplies the District with treated water. In addition, the District has an additional 2 cubic feet per second (cfs) of hydraulic capacity (1,450 AF/Y) in the AMP should additional water become available and needed.

The District's groundwater sources include the Rose Canyon and Lang Wells, and the privately owned Upper Schwendeman Well. Groundwater from the Arroyo Trabuco aquifer, part of the San Juan Valley Groundwater Basin, is treated at each well and pumped into the District's distribution system. Groundwater production varies depending on seasonal rainfall, with marginal water production during dry periods or periods of severe drought.

Although sufficient capacity is available to meet water demands, other factors that can significantly impact current and future water supplies were considered. These other factors, discussed below, include water service reliability, water quality, water conservation, and water shortage.

Water Service Reliability

Water service reliability or the ability to reliably supply water to meet the District's demands was assessed. The assessment consisted of determining the potential impacts of climatic and water quality factors on water supply sources and comparing these with projected water demands. Projected water demands developed by the District up to 2030 are based on available data and represent annual average water use. Because the majority of the District's water supply is imported water from MWDOC, the imported water supply values used were obtained from MWDOC. As the wholesale supplier for 30 Orange County cities and water agencies, MWDOC conducted a regional assessment of the reliability of water supply and its vulnerability to seasonal or climatic factors. MWDOC's 2005 Urban Water Management Plan describes, in detail, the method of analysis and assumptions used in its assessment of the reliability of its water supply to its member agencies. MWDOC's assessment compared supplies of the region's groundwater, recycled water, surface water, and imported water to the region's demands based on historical hydrology and each member agency's water use and water sources.

To analyze the reliability of water supply, MWDOC established the hydrologic conditions for a normal water year, single dry water year, and multiple dry water year. To determine each water year type, historical hydrology data for the region dating from 1922 to 2004 was used, as well as retail demands, local supplies, and imported supplies. Based on this, the water year types determined are shown below:

- Normal water year: average of historical hydrology from 1922 to 2004
- Single dry water year: 1961 hydrology
- Multiple dry water year: 1959 to 1961 hydrology

This data, combined with water demands from MWDOC's member agencies, was used with a water balance computer model to determine water supply reliability values for each member agency, including Trabuco Canyon Water District. In determining water service reliability, MWDOC found that in dry years the retail demand usually increases above normal years due to the hot and dry weather. At the same time, local supplies usually decrease because of less precipitation and recharge of watersheds. Therefore in its assessment, MWDOC accounted for a decrease in local supply and an increase in imported water supplies. The increase of imported water during dry water years, compared to normal water years, was projected for a single dry water year and for series of multiple dry water years consisting of three-year periods in consecutive order.

In summary, results of the analysis provided by MWDOC conclude that the region will have sufficient supplies to meet the District's imported water demands under every scenario through 2030. Together with the District's projections for local supply, the reliability of water service is projected to meet the various scenarios evaluated. With respect to water quality and its impact on supply reliability, MWDOC's 2005 Urban Water Management Plan concludes that current management strategies have accounted for all known and foreseeable water quality impacts. In addition, it states that the region does not anticipate that any water quality issues would reduce supply availability. However, unforeseeable water quality issues could potentially alter the region's water supply and adversely impact its service reliability.

Demand Management Measures

Demand Management Measures (DMM) consist of programs to increase conservation, water awareness, and encourage efficient water use. These demand management measures, also known as Best Management Practices (BMPs), include a minimum of 14 types of measures that are monitored to evaluate their effectiveness within the region and District's service area. To meet the requirements of Water Code Section 10631, the Urban Water Management Planning Act allows members of the California Urban Water Conservation Council (CUWCC) to submit their annual BMP Activity Reports that include an agency's progress in implementing and monitoring of its BMPs. Since 1991, the District has been a signatory to the Memorandum of Understanding regarding Urban Water Conservation in California, and is therefore a member the CUWCC. As an active reporting member of the CUWCC, the District began submitting annual reports in 1992. The two most recent annual CUWCC Annual BMP Implementation Reports for 2003 and 2004 are attached to this Plan.

Currently, under the Conservation Pricing BMP, the District is in the process of implementing a Conservation Encouragement Rate Program (CERP). The new CERP is a tiered program for agricultural and residential users and is planned to begin in 2006 and 2007, respectively. The goals of the CERP are to encourage customers, through a tiered warm and cool season rate structure, to conserve water, reduce excessive water use, and encourage best management watering practices.

Also, the District has entered into a Letter Agreement with MWDOC to participate in a regional SmarTimer Rebate Program. Under this program, residential customers and small commercial properties are eligible to receive a rebate when they purchase and install a new, state-of-the-art, weather-based sprinkler timer which has been shown to save 41 gallons per day per residential installation and to reduce runoff and pollution by 49 percent.

Overall, the District is active in submitting BMP activity reports through the CUWCC, promoting conservation, efficient water use, and greater water awareness. Through its continued implementation of BMPs and new programs such as the CERP and the SmarTimer Rebate Program, the District is making progress in implementing the DMMs.

Water Shortage Contingency Plan

During water shortages, the District manages its local and imported water supplies by utilizing various mechanisms to ensure reliability. Water shortages may result from variations in weather and natural and unnatural catastrophes, such as, but not limited to, pipeline failures, transmission facility failures, supply contamination, and earthquakes. In 1992 the District adopted its Water Shortage Contingency Plan (WSCP) in response to California Assembly Bill No. 11. The purpose of the WSCP is to conservatively manage water resources to be able to provide water to the District's customers, on an equitable and business-sound basis, in the event that water supplies to the District are curtailed by as much as 50 percent.

Because the majority of the District's water supply is imported water, the District's water supply will be subject to MWDOC's regional water supply plan which follows MET's Water Surplus and Drought Management Plan (WSDM Plan). The WSDM Plan defines five surplus management stages and seven shortage management stages to guide resource management activities. Each year, MET evaluates the level of supplies available and existing levels of water in storage to determine the management actions that would avoid an extreme shortage to the maximum extent possible, and minimize adverse impact to retail customers should an extreme shortage occur. MET has also outlined in the WSDM Plan the sequencing of actions that will be taken based on detailed modeling of their existing and expected resources. These actions include, but are not necessarily limited to, surface storage management/withdrawal, groundwater storage/withdrawal, curtailment of groundwater replenishment storage programs, and conservation. MET has stated that, through effective management of its water supply, it expects to be 100 percent reliable in meeting water demands through the next ten years.

However, if conservation or mandatory reduction become necessary, the District will take action and implement the appropriate stages of its WSCP to meet up to a 50 percent reduction in water supply. The WSCP provides measures to reduce normal operational losses and facilitates the reduction in end-user demand. The various measures include mandatory water use prohibitions, water reduction methods, and penalties for excessive water use. The financial impacts to the District include fixed

and variable costs to implement the plans, anticipated shortfalls in projected revenue, and measures to overcome expenditure and revenue impacts. In summary, the District's WSCP together with MET's WSDM Plan, provide a water shortage contingency plan with mechanisms to ensure supply reliability, provide the District with action stages to meet reductions in water supply, and assess the potential economic impact to the District.

Projects to Improve Water Supply Reliability

The District is committed to supporting programs to maximize existing water sources and minimize the region's dependency on imported water supplies. As a member agency of MWDOC, the District supports and has also directly participated in various programs, studies, and plans led by MWDOC. In its 2005 Urban Water Management Plan, MWDOC includes the following planned water supply projects:

- Integrated Regional Water Management Plan
- Water Efficiency Programs
- Orange County Water Reliability Plan
- South Orange County Water Reliability Plan
- Southern California Comprehensive Water Reclamation and Reuse Study
- Ocean Water Desalination Development
- Incentive Programs for Local Supply Development

Local projects applicable to the District, such as increasing recycled water reuse, additional dry weather runoff capture and reuse, and increasing the efficiency of water treatment operations are included in the above programs.

Summary

In summary, the findings of the District's 2005 Urban Water Management Plan show that the District's imported water supplies together with planned recycled water supplies will be critical for meeting the District's water demands through 2030. The District's local groundwater supplies are expected to continue as an important source of water for meeting local demands while also contributing to the region's water supplies by not increasing the region's dependency on imported water supplies. Therefore, the District's projected water demands are expected to be reliably met by: reliable imported water from MWDOC, local groundwater supplies, continued optimal use of reclaimed and recycled water for current and future landscape irrigation applications, continued application of Best Management Practices, and implementation of the Conservation Encouragement Rate Program.

In compliance with the California Water Code, the Trabuco Canyon Water District has encouraged community participation in its urban water management planning efforts. A Public Hearing will be held on November 16, 2005 at the District office. An informational presentation, with draft copies of the Plan, will be offered to the representative homeowners associations within the District. Notice of the draft Plan preparation and Public Hearing were also posted on the District's internet web page

at the beginning of October 2005. Legal public notices were published in a local newspaper of general circulation and posted at the District's administrative office. A copy of the draft Plan was submitted to the District's water wholesaler, MWDOC, the City of Rancho Santa Margarita, and the County of Orange for review and comment. Finally, copies were also available at the District office.

Notice of Adoption

The District's Board of Directors, at its regularly scheduled December 21, 2005 meeting, will adopt the 2005 Urban Water Management Plan. Following adoption and in compliance with the California Water Code, it will be submitted to the California Department of Water Resources within 30 days of Board approval and adoption. Copies of the adopted plan update will also be submitted to MWDOC, the California State Library, the City of Rancho Santa Margarita, and the County of Orange. This Plan includes all information necessary to meet the requirements of the California Water Code Division 6.

CHAPTER 1. INTRODUCTION AND OVERVIEW

California Water Code 10644(a) requires urban water suppliers to file with the Department of Water Resources (DWR), the California State Library, and any city or county within which the supplier provides water supplies, a copy of its Urban Water Management Plan, no later than 30 days after adoption. Urban water suppliers are required to file an Urban Water Management Plan at least once every five years on or before December 31, in years ending in five and zero.

The 2005 Urban Water Management Plans are due December 31, 2005. All urban water suppliers as defined in Section 10617 (including wholesalers), either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet annually are required to prepare an Urban Water Management Plan (UWMP or Plan).

Trabuco Canyon Water District's (District or TCWD) Urban Water Management Plan serves as:

- A long-range planning document for water supply
- Foundation document and source of information for Water Supply Assessments (Water Code 10613)
- Source data for development of a regional water plan
- A reference source document for the City of Rancho Santa Margarita and County of Orange to update their General Plans
- A planning document for property owners and developers when planning for and proposing new projects
- A key component to assist in preparation of Integrated Regional Water Management Plans

1.1 ORGANIZATION OF THIS PLAN

The Plan is divided into eight Chapters.

- Chapter 1 - Introduction and Overview explains the purpose and development of the Plan, agency coordination and plan adoption describing Trabuco Canyon Water District as an agency and its service area.
- Chapter 2 - Service Area and Facilities describes the area, demographics, population and climate.
- Chapter 3 - Water Supply Sources provides details of local and imported water supplies as well as the reliability of the supply.
- Chapter 4 - Water Use provides details of historical and projected water use.
- Chapter 5 - Water Demand Management Measures includes Best Management Practices with methods for conservation and water use reduction.

- Chapter 6 - Planned Water Supply Projects and Programs provides information on projects that are in progress to meet the projected water use for the region.
- Chapter 7 - Water Shortage Contingency Plan provides mechanisms to ensure supply reliability, action stages to meet reductions in water supply, mandatory prohibitions/penalties and financial impacts of reduced sales.
- Chapter 8 - Recycled Water Plan provides information on the reclaimed/recycled water uses.
- Chapter 9 - Water Quality Impacts on Reliability provides information on the imported and local water quality impacts on reliability.
- Chapter 10 - Water Service Reliability assesses the reliability of water supplies based on normal water years, a single dry year, and periods with multiple dry years.

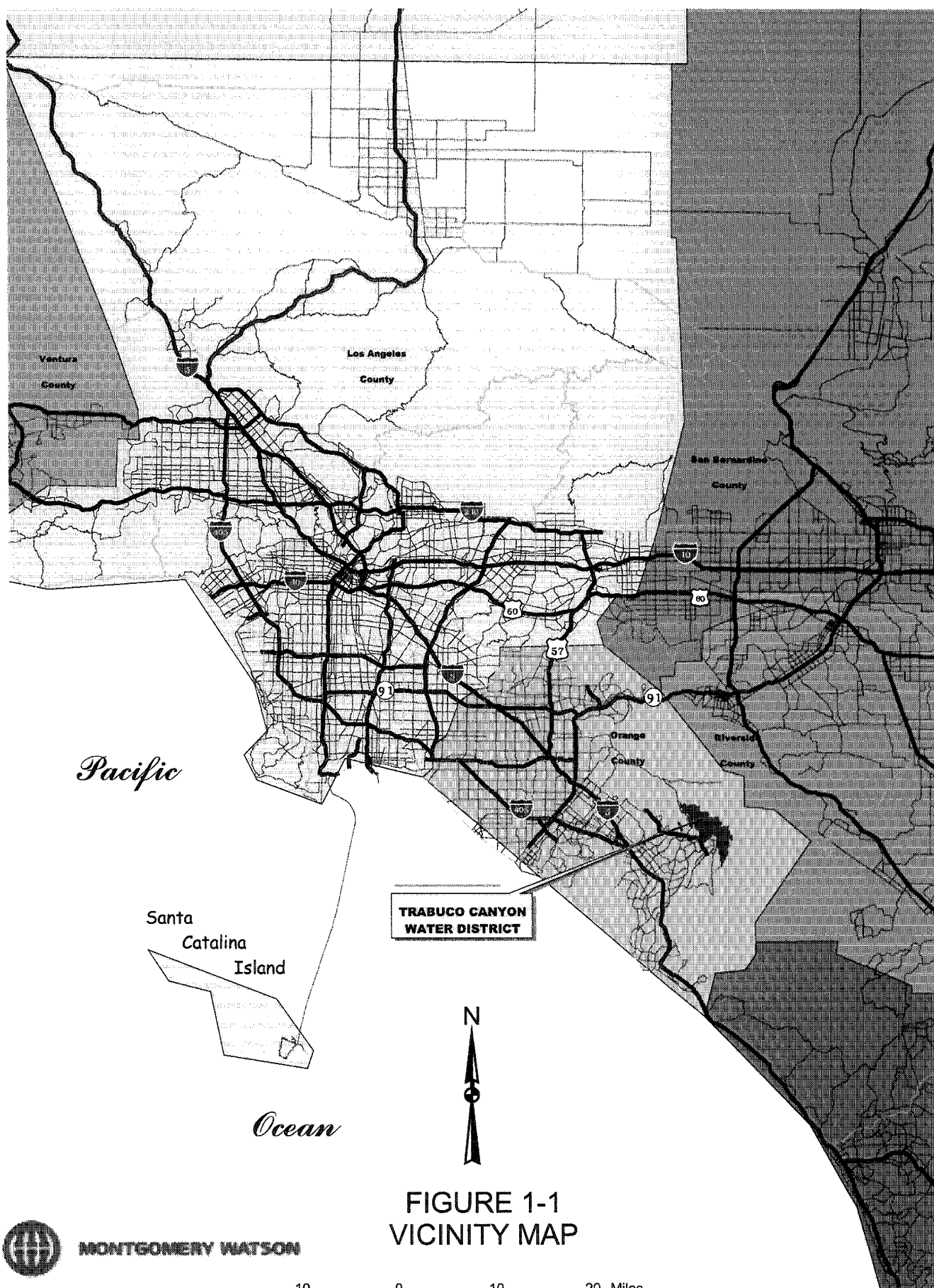
1.2 SYSTEM OVERVIEW

The Trabuco Canyon Water District is a county water district organized and operating pursuant to Section 30000, and following, of the Water Code of the State of California. The District was organized on February 26, 1962 under Division XII of the California Water Code. The District is governed by a five-member Board of Directors elected to alternating four-year terms at elections held every two years. The current employee population totals 23 individuals.

Shortly after its formation, the District constructed the major transmission line into the central canyon area to provide water service to the few hundred residences along its route and in that canyon area. The western and eastern portions of the District both began urbanizing in the early to mid-1980's with the development of Robinson Ranch and Portola Hills located in the southern portion of Orange County. Figure 1.1 shows the general location of the water district.

In addition to water service, the District was later enabled to provide wastewater treatment and reclaimed water service with the construction of sewer collection facilities and acquisition of treatment capacity from Santa Margarita Water District for the western portion of the District and for the eastern portion of the District construction of District-owned sewer collection, wastewater treatment and recycled water facilities. Intensive urbanization occurred in these two regions over the remainder of the 1980's and early 1990's with development decreasing after 1995.

The District currently serves an estimated population of 13,665. The District provides water service to 4,000 connections and sewer service to just over 3,500 connections within its boundaries, plus an additional 1,600 connections in the Irvine Ranch Water District, and 233 connections in the Santa Margarita Water District. The District provides reclaimed and recycled water service to Dove Canyon golf course, Dove Canyon Master Association, the Trabuco Highlands Community Association, and the Robinson Ranch Homeowners Association.



The District obtains water from a variety of sources including local groundwater wells, State Project water, and inter-ties with other water purveyors. The District treats the major portion of the collected wastewater at the Robinson Ranch Wastewater Treatment Plant (RRWWTP) while the remainder is conveyed to Santa Margarita Water District for treatment at their Chiquita Wastewater Reclamation Plant. The District reclaims the treated effluent from the RRWWTP by pumping treated and stored flows to the reclaimed water customers. In addition, “recycled” flows, which are urban runoff flows, can be pumped from the Dove Lake to augment treated effluent flows during periods of high demand.

1.3 AGENCY COORDINATION

Trabuco Canyon Water District is a member of the Municipal Water District of Orange County (MWDOC), the water wholesaler in the area. In preparation of this Plan, pertinent information regarding regional demands and supply was drawn from MWDOC’s Urban Water Management Plan. The District also reviewed the regional demands and supply information from the plan of the Metropolitan Water District of Southern California (MET). The District has reviewed and provided comments on MWDOC’s plan and provided copies of its draft Plan to MWDOC for their review and comment.

The City of Rancho Santa Margarita (City of RSM) was provided a copy of the draft Plan for review and comment. The City of RSM covers the eastern portion of the District including the communities of Robinson Ranch, Trabuco Highlands, Dove Canyon, Rancho Cielo, Fieldstone, and Walden. The remainder of the District is within unincorporated Orange County, and the County of Orange was also provided a copy of the draft Plan for review and comment.

Table 1 summarizes the efforts the District has taken to include various agencies and citizens in this planning process.

<p style="text-align: center;">Table 1 Coordination with Appropriate Agencies</p>							
	Participated In UWMP	Commented on the draft	Attended Public Meetings	Contacted for assistance	Received Copy of	Sent notice of intention	Not Involved /No Information
MET	X				X		
MWDOC	X			X	X		
City of RSM					X	X	
County of Orange				X	X	X	
General Public					X	X	

1.4 UWMP PREPARATION AND RESOURCE OPTIMIZATION

The District prepared the various components of the 2005 UWMP, including evaluation and descriptions of the various sources of water supply, efficient uses of water, water service reliability, demand management measures, implementation

strategy, and schedule. In preparing, developing, and submitting the 2005 UWMP, the District formed a project review team comprised of District staff and the consulting firm of Brown and Caldwell.

Information in this plan update was developed from various sources including District administrative, customer service, water, wastewater, and recycled operations data. Additionally, the District's Final Water, Wastewater and Reclaimed Water Master Plan" (Master Plan), dated December 1999, as well as the 1991 County of Orange Foothill/Trabuco Specific Plan, U. S. Bureau of Census, Census 2000 data, City of Rancho Santa Margarita General Manager, and County of Orange land use data were utilized as information sources during the preparation of this plan update. The District also utilized the draft 2005 Urban Water Management Plan prepared by MWDOC and the draft 2005 Regional Urban Water Management Plans prepared by MET. All of these information sources were utilized and coordinated with Brown and Caldwell.

1.5 NOTIFICATION, PARTICIPATION AND PLAN ADOPTION

The Trabuco Canyon Water District has encouraged community participation in its urban water management planning efforts since the first plan was prepared in 1985. Public Hearings were held on the 1985, 1990, 1995 and 2000 plans, and the draft of this Plan was available at the District office for a month prior to the public meeting held on November 16, 2005.

Notice of the draft Plan preparation and public meeting was posted on the District's web page on the Internet at the beginning of October 2005. Legal public notices were published in a local newspaper of general circulation and posted at the District's administrative office. A copy of the draft plan was submitted to the District's water wholesaler, MWDOC, for review and comment. In addition, copies were also available at the District office.

District staff and Brown and Caldwell prepared the 2005 Urban Water Management Plan during the summer and fall of 2005. The District's Board of Directors, at its regularly scheduled December 21, 2005 meeting, adopted the updated plan. Following adoption, it will be submitted to the California Department of Water Resources within 30 days of Board approval. Copies of the adopted plan update will also be submitted to MWDOC, California State Library, City of Rancho Santa Margarita, and the County of Orange. Attached to the cover letter addressed to the Department of Water Resources and included as **Appendix A** are copies of the signed Resolution of Plan Adoption. This plan includes all information necessary to meet the requirements of the California Water Code Division 6.

CHAPTER 2. SERVICE AREA AND FACILITIES

2.1 INTRODUCTION

Trabuco Canyon Water District is located in the southeastern portion of Orange County at the foothills of the Santa Ana Mountains and encompasses approximately 9,100 acres. Figure 1.1 shows the general location. Prior to 2000, the District was entirely within the unincorporated area of Orange County. In 2000, the City of Rancho Santa Margarita was incorporated and now covers the eastern portion of the District. The eastern portion of the District is accessed via Santa Margarita Parkway or Antonio Parkway and Plano Trabuco Road with the western portion of the District being accessed via El Toro Road or Santiago Canyon Road. Live Oak Canyon Road/Trabuco Canyon Road is the main artery through the central portion of the District between El Toro Road and Plano Trabuco Road.

The terrain within the District is generally steep hills and canyons throughout the central area of the District. The east and west sides consist of more gentle terrain made up primarily of rolling hills. Elevations within the District range from approximately 900 feet above mean sea level in the lower Aliso Creek area and the southern area of Dove Canyon, to nearly 2,400 feet in the northeasterly portion of the District adjacent to the Cleveland National Forest.

Trabuco Canyon Water District delivers potable water through its pressurized water system consisting of approximately 56 miles of pipelines and nine primary pressure zones. The District's sources of supply are the V. P. Baker Aqueduct that provides untreated water to the District's Dimension Water Treatment Plant, local groundwater, and the Antonio Water Delivery System, which is supplied from the Allen-McColloch Pipeline. To provide reliability and redundancy, the District's system is interconnected with adjacent agencies including Santa Margarita Water District, Irvine Ranch Water District, Santiago County Water District, and El Toro Water District.

The District's Robinson Ranch Wastewater Reclamation Plant now reclaims about 780,000 gallons per day of wastewater that is utilized to irrigate the Dove Canyon Country Club golf course as well as parks, greenbelts and open space in Dove Canyon, Robinson Ranch, and Trabuco Highlands. This non-domestic irrigation water distribution system consists of a pump station below the reclaimed water storage reservoir pumping to two different pressures zones, Dove Canyon to the south and Robinson Ranch to the north, and about five miles of pipelines ranging in size from 2 to 12-inches in diameter.

2.2 DEMOGRAPHICS

In 1991 the County of Orange adopted the Foothill/Trabuco Specific Plan which dictates land use densities and other development criteria. Approximately 70 percent of the total District is within this specific plan area, and the remaining land within

the area is undeveloped. This specific plan provides a maximum development level for the District to use in its future water and wastewater master planning. Since the adoption of the Specific Plan, the number of County-approved dwelling units has been downsized, including one area of 23 acres being dedicated as open space.

Other major existing planned community developments within the District include Portola Hills, Robinson Ranch, Trabuco Highlands, Rancho Cielo, and Dove Canyon, as shown in Figure 2.1. Nearly all of the remaining undeveloped land within the District is planned for residential development and most of the existing development is devoted to residential land uses with the exception of O'Neill Park (a 400-acre county regional park), Joplin Boys' Ranch (a 300-acre county juvenile facility), an abbey operated by the Norbertine Fathers of Csorna, the Ramakrishna Monastery, two large commercial nurseries, and a few small commercial centers scattered throughout the District.

The Board and staff of the District have actively pursued water conservation and reclamation and recent efforts toward conducting residential water audits, ultra-low flush toilet replacements, and landscape water audits are being implemented or in the preliminary planning stages. The District is also attempting to expand the capacity of its groundwater wells to help minimize the dependency on imported water supplies and optimizing its reclaimed water system.

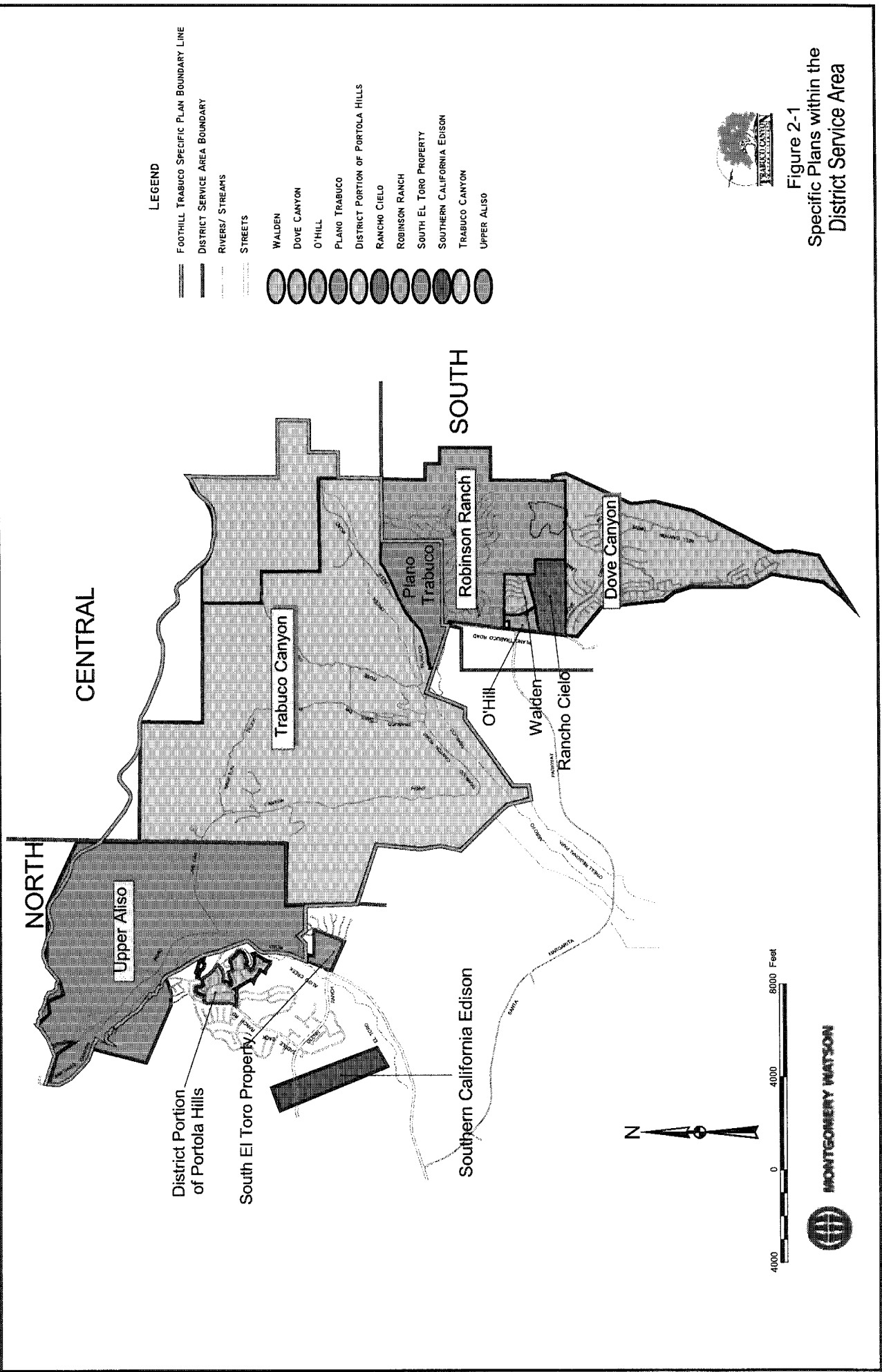


Figure 2-1
Specific Plans within the
District Service Area

2.3 POPULATION

TCWD currently serves an estimated population of 13,665, a 12.5 percent increase over that reported in the 2000 Plan Update. Population is projected to reach 17,990 at build out. The projected population has been estimated by District staff based on the most current available information as follows:

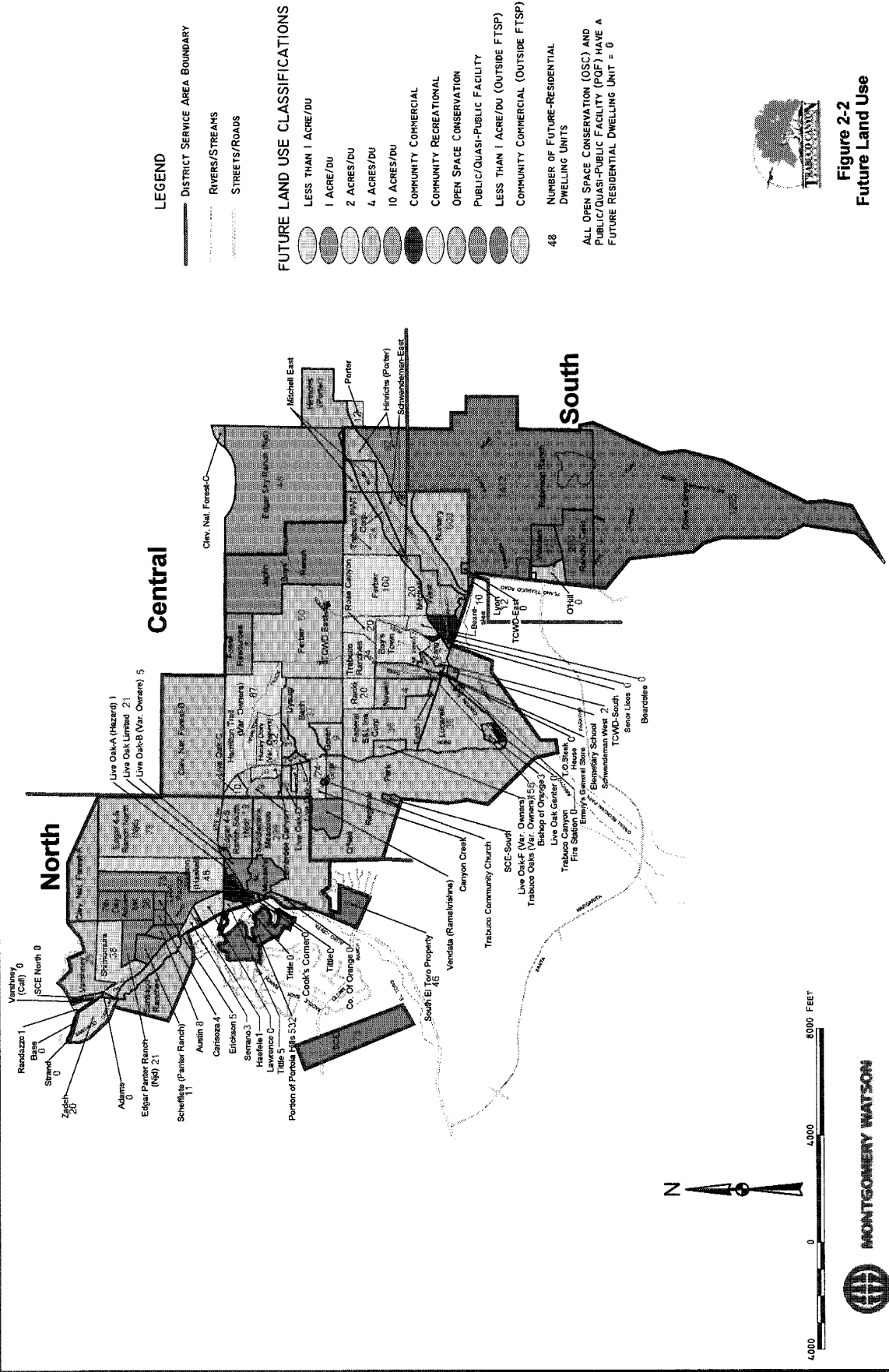
- Resources & Development Management Department of the County of Orange, County-approved Tentative Tract Maps and Tract Maps
- Developers owning property within the District's boundaries
- Sub-Area Master Plans
- County of Orange Foothill/Trabuco Specific Plan
- U. S. Bureau of Census, Census 2000 data

The Resources & Development Management Department (RDMD) requires that the County land use decisions in the area conform to the County's General Plan where applicable. The County's projections are based on the maximum number of housing units per acre that could be developed in the unincorporated areas of the District. Based on this information, the County currently projects that the total additional housing units could be 2,086 by 2030 which is higher than the District's projection of 1,309 housing units. However, in a subsequent conversation with County personnel, it was determined that the County projections were based on data from 2002 and 2003 and that it is known that more current data is available from developers. The most current data available from developers shows a fewer number of dwelling units. The District has obtained these current values from developers and incorporated them into Sub-Area Master Plans.

The District requires that developers building over 10 units to contract through the District to provide a Sub-Area Master Plan (SAMP). For developments below 10 units, the District conducts an individual water analysis for each development. Three large developments for which the District has approved SAMPs include: Saddleback Meadows (up to 266 units); Saddle Creek/Crest (up to 162 units); and Robinson Ridge (up to 203 units). These three developments are projected to be built-out by 2010.

The number of units and the land use from the Foothill/Trabuco Plan were adjusted downward in the District's 1999 Master Plan. Figure 2.2 shows Future Land Use Classifications from the District's Master Plan. The number of housing units presented in the 2005 UWMP have been adjusted to reflect the most recent development information.

Future developments consist of single-family residences yielding low to medium housing density. Household sizes within the District range from 2.9 to 3.5 per household as calculated by the U. S. Bureau of Census, Census 2000 data. Staff used the census data to project an increase in housing units in five-year increments with the applicable household sizes for each development.



Existing and projected population is shown in Table 2 in five-year increments to 2030.

Table 2 Population -- Current and Projected						
	2005	2010	2015	2020	2025	2030
Service Area Population	13,665	16,177	16,768	17,320	17,767	17,990

Source: TCWD staff projection

2.4 CLIMATE

The District has a Southern California coastal climate with hot, dry summers, fairly mild winters and annual average precipitation of about 13 inches. The region is subject to wide variations in annual rainfall from year to year. The area has also experienced occasional wildfires in the native chaparral and oak areas, as well as heavy rainfall, and flooding in lower elevations. Table 3 shows the historical average evapotranspiration (ET_o) rates applicable to the District's service area. The ET_o rates are representative monthly average values for a historical period between 1982 and 2004. The period of record for the monthly average rainfall and temperature values are from 1927 through June 2003.

Table 3 Climate						
	Jan	Feb	Mar	Apr	May	June
Standard Monthly Average ET _o ^a	2.18	2.49	3.67	4.71	5.18	5.87
Average Rainfall (inches) ^b	2.53	2.73	2.21	1.01	0.26	0.07
Average Temperature (Fahrenheit) ^b	53.70	55.33	56.90	60.30	63.80	67.30

Table 3 Climate (continued)							
	July	Aug	Sept	Oct	Nov	Dec	Annual
Standard Monthly Average ET _o ^a	6.29	6.17	4.57	3.66	2.59	2.25	49.63
Average Rainfall (inches) ^b	0.01	0.08	0.27	0.36	1.32	1.99	12.82
Average Temperature (Fahrenheit) ^b	71.60	72.50	71.00	66.00	59.20	54.50	62.70

a. California Irrigation Management Information System (CIMIS), Station 75, Irvine, California, South Coast Valleys Region.

b. Western Regional Climate Center, Tustin Irvine Ranch, California.

CHAPTER 3. WATER SUPPLY SOURCES

3.1 INTRODUCTION

Trabuco Canyon Water District has a variety of water supply sources, including imported wholesale water supplies, ground water, and recycled water. Table 4 shows the various water sources that are discussed in more detail in the sections that follow. The District has a total purchased annual capacity of 7,240 acre feet of wholesale water supply with current and planned water supplies shown in Table 4. The annual capacity totals 4,340 acre feet per year (AF/Y) in the V. P. Baker Aqueduct and 2,900 AF/Y in the Allen-McColloch Pipeline (AMP). In addition, the District has an additional 2 cubic feet per second (cfs) hydraulic capacity (1,450 AF/Y) in the AMP should additional water become available and needed, as further discussed below.

From an average annual standpoint, the current purchased capacity will meet the District's current and planned water supply demand. These values were developed in coordination with MWDOC. MWDOC concurs with the values and provided the details for the service area.

Table 4 Current and Planned Water Supplies – AF/Y						
Water Supply Sources	2005	2010	2015	2020	2025	2030
Wholesale Water Suppliers						
Municipal Water District of Orange Co.	3,281	4,542	4,818	5,058	5,269	5,400
Supplier produced groundwater	400	238	238	238	238	238
Supplier surface diversions	0	0	0	0	0	0
Transfers in or out	0	0	0	0	0	0
Exchanges in or out	0	0	0	0	0	0
Recycled Water (current and projected use)	850	956	1,000	1,000	1,000	1,000
Desalination	0	0	0	0	0	0
Total	4,531	5,736	6,056	6,296	6,506	6,638

Source: TCWD projections based on historical data

3.2 WHOLESALE WATER SUPPLIES

Imported wholesale water, purchased through MWDOC, is the main source of water supply to the District. The District has capacity in two separate imported water supply facilities, which deliver water to different ends of the District in substantially equal quantities. These two sources are described below.

V. P. Baker Aqueduct

The District receives untreated imported water from the V. P. Baker Aqueduct. The V. P. Baker Aqueduct is owned and operated by the Santiago Aqueduct Commission (SAC), a joint power agency formed in 1961. Water for the V. P. Baker Aqueduct originates from either MET or from Irvine Lake and is purchased through MWDOC.

The V. P. Baker Aqueduct receives Colorado River water, which flows from Lake Mathews through the Lower Feeder and the Santiago Lateral, from MET's Orange County-33 connection. The District has a total contractual capacity of 5.94 cfs in the V. P. Baker Aqueduct which equates to 4,340 acre-feet on an annual basis. This matches the capacity of the District's Dimension Water Treatment Plant and El Toro Road transmission facilities supplying water to the west side of the District and ultimately to the Harris Grade Reservoirs from where it can be distributed to the entire District service area.

Allen-McColloch Pipeline

The Allen-McColloch Pipeline (AMP) was constructed in 1982 by Orange County water agencies to convey treated imported water to the eastern and southern portions of the county. The AMP extends from MET's Diemer Filtration Plant in Yorba Linda to Lake Forest. MET purchased the AMP from the Orange County agencies in 1996. TCWD acquired 4 cfs (2,900 acre feet per year) of capacity in the AMP prior to MET's purchase. As a condition of its purchase of the AMP, MET is obligated to augment the capacity of the AMP when the need arises. MET plans to operate the AMP on a utility or open-capacity basis once it completes the AMP flow augmentation project, so TCWD will ultimately be able to take additional supply from this facility, if necessary.

Water from the AMP is conveyed to the District by Santa Margarita Water District through the South County Pump Station and South County Pipeline/Antonio Delivery System, respectively. The District has 6 cfs of capacity in this system, and the treated water enters the District at the Plano Trabuco Road interconnection with Santa Margarita Water District on the eastern side of the District. Using 6 cfs as the capacity of this source, 4,340 AF/Y is available to the District.

3.3 RECYCLED WATER

The District owns and operates the Robinson Ranch Water Reclamation Plant that provides wastewater collection and treatment for developments on the east side of the District. Current treatment levels meet or exceed recycled water criteria and applications as defined in the California Administrative Code, Title 22, Division 4. Recycled water is discussed in detail in Chapter 8 of this UWMP.

The local surface water consists of urban and storm water runoff captured in Dove Lake that the District pumps back to its reclaimed water seasonal storage reservoir for distribution to recycled water users. This practice helps improve the water quality in Dove Lake by providing treatment, including aeration and vegetation controls, to the lake water throughout the year, and provides an additional source of water to the District. The District distinguishes between this source and the wastewater reclaimed at its treatment plant by designating the treated wastewater as reclaimed and the runoff as recycled. This water is used in the District's non-domestic water irrigation system and to be consistent with the nomenclature in the State's tables, it will all be called recycled herein. Since coming on line, this runoff

source has averaged 100 AF/Y, which is almost 15 percent of the total amount of recycled water used annually for irrigation within the District. Current and projected water supply by source is shown in Table 4.

3.4 SUPPLIER SURFACE DIVERSIONS

The District has the capability to obtain surface diversions from Santiago Reservoir (Irvine Lake) through the V. P. Baker Aqueduct for treatment at the Dimension Water Treatment Plant. Through various leases and arrangements which TCWD is party to, Irvine Lake water can be utilized to provide a limited amount of supply to the V. P. Baker Aqueduct for emergency purposes only. Studies may be undertaken in the future to evaluate this source of water and its availability.

3.5 TRANSFERS / EXCHANGES IN OR OUT

The District has the capability to transfer and exchange to and from the District and neighboring districts, including Santa Margarita, Irvine Ranch, El Toro, and Santiago County Water Districts. Through various arrangements water can be transferred/ exchanged to and from other neighboring districts for short durations such as emergencies or water transmission line breaks. Studies may be undertaken in the future to evaluate other opportunities.

3.6 DESALINATION

The District's service area is located in the foothills and canyon areas and not near the Pacific coast. There are no sources of water that are near the ocean or any brackish water aquifer, and thus no opportunities for desalination exist. Therefore, it would be non-economical and not feasible to pursue desalination as an additional source of supply.

3.7 GROUNDWATER

The District owns two wells that pump from the San Juan Valley Groundwater Basin. These ground water sources are from the San Juan Basin only (Table 5) and are highly desirable in terms of water quality, cost, utilization of local energy resources, and also contribute to the District and Southern California being less dependent on imported water supplies on an overall basis. However, because they are subject to interruption during drought conditions that occur occasionally in the region, TCWD cannot count on them as reliable supply sources during periods of drought and peak demands. The District must plan to have other adequate sources toward meeting its ultimate demand requirement.

Per California's Groundwater Bulletin 118, dated 2004 (**Appendix B**), the San Juan Valley Groundwater Basin (Groundwater Basin Number: 9-1) underlines the San Juan Valley and several tributary valleys in Southern Orange County. Figure 3.1 shows the South Coast Hydrologic Region which includes the San Juan Valley Groundwater Basin. The basin is bounded on the west by the Pacific Ocean and

otherwise by tertiary semi-permeable marine deposits. Average annual precipitation ranges from 11 to 15 inches.

Through Bulletin 118, the Department of Water Resources classified the San Juan Basin as a Type A Groundwater Budget, indicating that the basin was investigated and modeled to calculate a groundwater budget. Bulletin 118 did not identify the San Juan Basin as being overdrafted nor did it project that the basin will become overdrafted if the present management continues.

The Rose Canyon Well has been a District-owned facility since the mid-1960s, and the District has owned the Lang Well since the early 1980s. These wells were originally privately-owned wells and were dedicated to the District for the beneficial use of its customers. The Rose Canyon and Lang Wells pump water from a maximum depth of about 40 feet from the Arroyo Trabuco aquifer that is part of the San Juan Valley Basin.

The District has utilized these two wells since their dedication. Production varies depending on seasonal rainfall. In wet years, there is sufficient recoverable water to allow the wells to be operated all year. However, in years of average runoff conditions, the wells operate about seven months before water levels drop too low to maintain pumping. In dry years, the wells have only been operable for as few as two months. Based on this data, it is apparent that the wells cannot reliably help meet the high demands in the summer months or during periods of drought.

Since 2003, the District has been conducting the Creek and Well Monitoring Program, together with the California Department of Health Services. The Creek and Well Monitoring Program consists of test events, each event requiring specific sampling and monitoring criteria for creek flow and treated well water. This data will be used for evaluating the need for additional treatment facilities at the wells and meeting the requirements for the Long Term 2 Enhanced Surface Water Treatment Rule. A Notice of Exemption for groundwater treatment facilities was posted on April 22, 2005, in anticipation of construction of additional treatment facilities at the wells.

A third well, the Upper Schwendeman (US) Well is also part of the District's source of supply through a leasing arrangement with a private party. This well has a depth of about 160 feet and has historically produced up to 168 AF/Y.

Table 5 indicates the basin from which the District pumps groundwater.

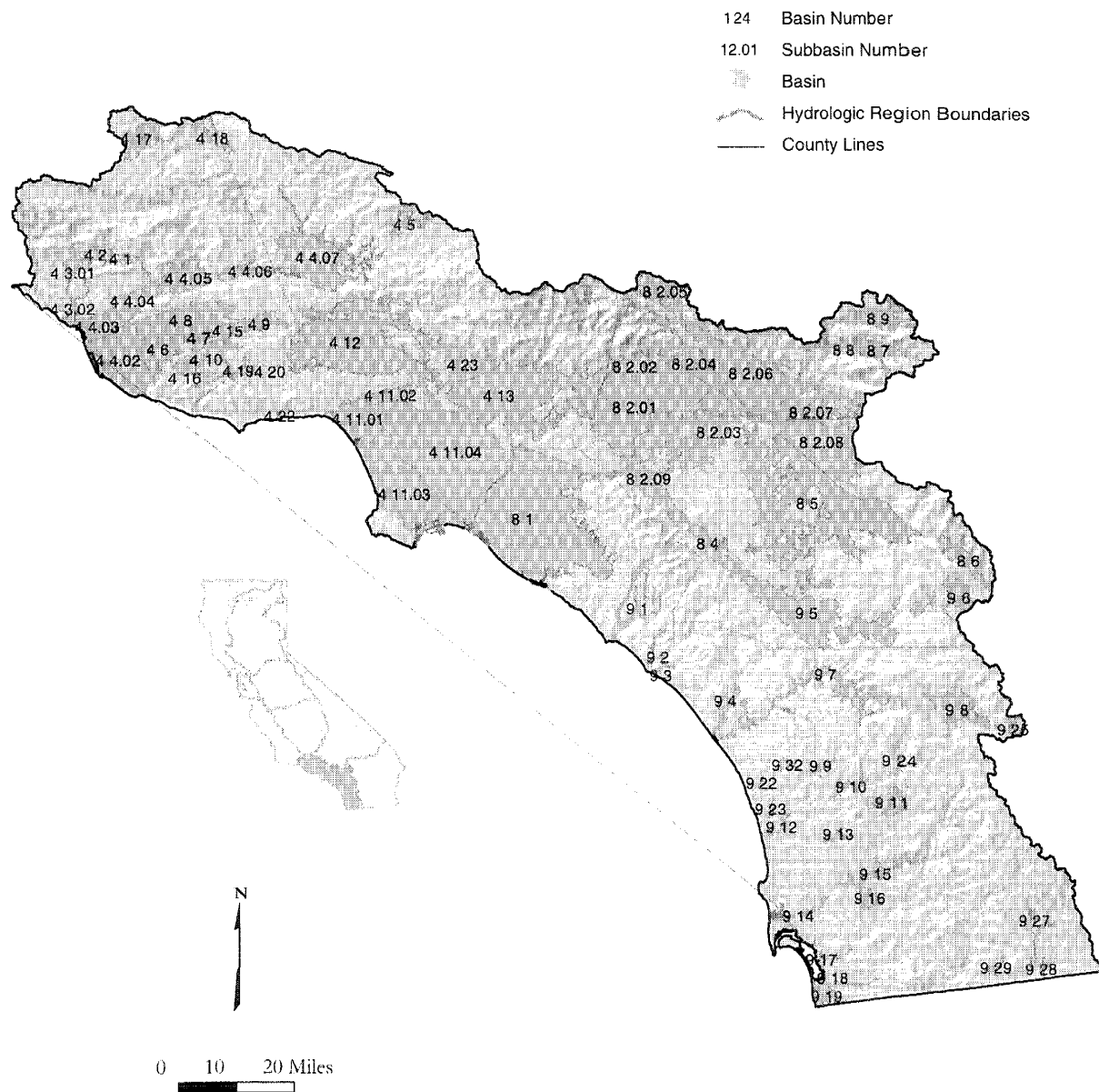


Figure 34 South Coast Hydrologic Region

Table 5 Groundwater Pumping Rights – AF/Y	
Basin Name(s)	Pumping Right – AF/Y
San Juan Valley Groundwater Basin	1,000
Total	1,000

Table 6 shows the amount of groundwater pumped from the District's wells between 2000 and 2004. Based on the District's historical data, when seasonably available, the wells may produce up to 1,000 acre feet per year.

The acre feet shown in Table 6 is based on the District's historical records.

Table 6 Amount of Groundwater Pumped – AF/Y					
Basin Name(s)	2000	2001	2002	2003	2004
San Juan Valley Basin Groundwater Basin	374	380	34	609	264
% of Total Water Supply	11%	11%	1%	24%	9%

Source: District historical well data records.

As shown in Table 7, the District projects that an average of 238 acre feet per year will be pumped from the District's wells over the next 25 years. The average was arrived at by averaging data for years 1978 through 2001, excluding unusually wet years from the El Nino storm events from 1996 to 1998.

Table 7 Amount of Groundwater Projected to be Pumped – AF/Y					
Basin Name(s)	2010	2015	2020	2025	2030
San Juan Basin	238	238	238	238	238
% of Total Water Supply	4.1%	3.9%	3.8%	3.6%	3.6%

Source: District staff projections based on historical well data.

3.8 RELIABILITY OF WATER SUPPLY (DRY YEARS OF REDUCTION IN SUPPLY)

The uncertainty of existing water supplies due to hydrologic variations and regulatory constraints has emphasized the need to address water supply reliability. Water supply reliability or the ability to reliably supply water to meet the District's demands was assessed for conditions with single dry water years and periods with multiple dry water years. The assessment consisted of determining the potential impacts of climatic factors on water supply sources and comparing these with supplies during a normal water year. The District's sources water consists of imported and local groundwater sources, with the majority of the supply being imported water purchased from MWDOC.

Table 8 shows imported and local water supplies for the following conditions:

- Normal water year: average of historical hydrology from 1922 to 2004
- Single dry water year: 1961 hydrology
- Multiple dry water year: 1959 to 1961 hydrology

These hydrologic conditions were determined from MWDOC by evaluating retail demands, local supplies, imported supplies, and historical hydrology data for the region dating from 1922 to 2004. MWDOC's 2005 Urban Water Management Plan describes, in detail, the method of analysis and assumptions used in its assessment of the reliability of its water supply to its member agencies. These years are important in determining the amount of water available to the District from MWDOC, however they may not equally represent local water supplies. To assess the reliability of projected local water supplies, historical groundwater production records and recycled water plans were reviewed and evaluated.

In evaluating the reliability of imported water supplies, MWDOC considered the District's reliability of local supplies. Because, the majority of the local water supply is recycled water that is used for landscape irrigation, this supply is assumed to be reliable during periods of single and multiple dry years. However, local groundwater sources will decrease and can vary from about 400 AF/Y to 250 AF/Y or less, per available historical data and projections. If necessary, to make up the additional local water that is typical of normal years, the District can increase its use of stored recycled water from Dove Lake. Water from Dove Lake would be used to further supplement recycled water. In the past, the District supplemented the recycled water demands through Dove Lake and through the purchase of domestic water. With recent improvements at Dove Lake, the District is now capable of further managing and supplying the recycled reservoir, through an air gap connection, additional water to meet current and projected demands.

Taking into consideration the District's local water supply, MWDOC evaluated the reliability of imported water supplies. Because more water is typically used during dry years, MWDOC increased its availability of imported water to the District. Table 8 shows imported water values provided by MWDOC to the District. Imported water values from MWDOC are projected to increase during single and multiple dry years by as much as 3 to 11 percent above normal years. MWDOC has committed through its evaluation of available sources and member agency demands, that it will reliably supply the District with greater than normal water supplies during periods of single and multiple dry years.

Table 8 Supply Reliability – AF/Y						
2010	Normal Water Year (Average)	Single Dry Year (1961)	Multiple Dry Water Years			
			2008	(1959)	2009	(1961)
Local Supply	1,194	1,041		956		1,091
	% of Normal	87%		80%		91%
Imported Supply	4,542	5,030		4,718		4,695
	% of Normal	111%		104%		103%
2015	Normal Water Year (Average)	Single Dry Year (1961)	Multiple Dry Water Years			
			2013	(1959)	2014	(1961)
Local Supply	1,238	1,086		1,037		1,137
	% of Normal	88%		84%		92%
Imported Supply	4,818	5,323		5,304		5,101
	% of Normal	110%		110%		106%
2020	Normal Water Year (Average)	Single Dry Year (1961)	Multiple Dry Water Years			
			2018	(1959)	2019	(1961)
Local Supply	1,238	1,086		1,051		1,141
	% of Normal	88%		85%		92%
Imported Supply	5,058	5,576		5,575		5,356
	% of Normal	110%		110%		106%
2025	Normal Water Year (Average)	Single Dry Year (1961)	Multiple Dry Water Years			
			2023	(1959)	2024	(1961)
Local Supply	1,238	1,086		1,051		1,141
	% of Normal	88%		85%		92%
Imported Supply	5,268	5,798		5,815		5,585
	% of Normal	110%		110%		106%
2030	Normal Water Year (Average)	Single Dry Year (1961)	Multiple Dry Water Years			
			2028	(1959)	2029	(1961)
Local Supply	1,238	1,086		1,051		1,141
	% of Normal	88%		85%		92%
Imported Supply	5,400	5,937		5,995		5,745
	% of Normal	110%		111%		106%

Source: As provided by wholesale supplier, Municipal Water District of Orange County.

3.9 BASIS OF WATER YEAR DATA

Reliability of a supply may often be impacted by climatic variation. To analyze the changes of reliability due to climate, this Plan first establishes the hydrologic conditions that define the climatic variations within the MWDOC region – what constitutes the normal water year, the single dry water year, and the multiple dry water years.

Table 9 shows the basis of water year type.

Table 9 Basis of Water Year Data				
Water Year Type	Basis of Water Year(s)			Based on Historical Sequence
Normal Water Year	Average of 83 Historical Hydrologies			1922 to 2004
Single-Dry Water Year	1961			1922 to 2004
Multiple-Dry Water Year	1959	1960	1961	1922 to 2004

Source: Municipal Water District of Orange County

When deciding on which historical hydrology to best represent the types of water year, MWDOC considered the combination of the following:

- Total retail demands of the water year
- Local supply condition of the water year
- Imported supply condition of the water year

In the situation where the reliability of imported supply is not specifically quantified, MWDOC uses the inferred approach again and assumes MET will be able to supply the imported demand under all hydrologic conditions. As a result, the water year is defined by the net difference of total retail demand less local supplies. In a dry year, the retail demand usually increases due to dry and hot weather. At the same time, local supply (run-off) usually is low due to less precipitation. The greater the net difference means the more critical it is for MWDOC to depend on imported supply to meet the demand.

Using the water balance computer model developed by MWDOC, all three variables – retail demand, local supplies, and imported supplies – were simulated using 83 historical hydrologies from 1922 to 2004. The average of the 83 simulated trials was used to represent a normal condition (normal water year). Of the 83 years, the hydrologic condition of 1961 yields the highest demand for imported supply and is therefore used to define a single dry year in the MWDOC service area. Similarly, the historical sequence from 1959 to 1961 yields the highest demand in a three-year sequence for imported supply and is used to define a multiple-dry year in the MWDOC service area.

However, MET defines its water years with different historical hydrologies. According to its draft RUWMP, 2005, MET defines its multiple dry years with

hydrologic conditions of 1990 to 1992 and single dry years with 1977. MWDOC did review its imported demand based on Metropolitan-defined water years. The result indicates that the single year of 1961 and the sequence of 1959 to 1961 are considered to be more conservative because they yield higher imported demands than any other years in the historical pool.

As shown in Table 10, climatic factors are the only factors resulting in an inconsistent water supply.

<p align="center">Table 10 Describe the Factors Resulting in Inconsistency of Supply</p>				
Name of Supply	Legal	Environmental	Water Quality	Climatic
Metropolitan Water District of Southern California				X
Lower Santa Ana Basin				X
Surface Diversions				X

Source: Municipal Water District of Orange County

3.10 TRANSFERS AND EXCHANGES

The District is currently evaluating transfer and exchange opportunities for both domestic and recycled water with neighboring water agencies. Studies are planned; however, at this time there is no definite known amount to transfer or exchange.

<p align="center">Table 11 Transfer and Exchange Opportunities – AF/Y</p>					
Source Transfer Agency	Transfer or Exchange	Short Term	Proposed Quantities	Long Term	Proposed Quantities
NOT APPLICABLE	0	0	0	0	0

3.11 PLANNED WATER SUPPLY PROJECTS AND PROGRAMS

As shown in Table 8, the District's water supply will be reliably met by imported water from MET and the District's local supplies that include groundwater, reclaimed water, and recycled water, as discussed below.

Groundwater

The District will continue to maximize the water drawn from its Rose Canyon and Lang Wells as well as the U. S. Well while investigating the potential of developing additional groundwater sources as other portions of the District are developed. The District will also investigate the feasibility of acquisition of existing private wells as a source of additional potable and/or irrigation water.

Recycled Water and Urban Runoff

Recycled water is a very reliable water source because it is consistently available from the District's wastewater reclamation plant. The District also has the capability of adding domestic water as well as captured urban runoff from Dove Lake to the recycled water seasonal storage reservoir at the reclamation plant. The District has been adding customers to its non-domestic irrigation system to expand the use of recycled water periodically since the construction of the wastewater reclamation plant. This system is approaching its capacity in terms of annual water supply versus sewage effluent treated but plans are to expand the system once the Robinson Ranch Wastewater Treatment Plant (RRWTP) is expanded as new development occurs in the eastern and central portions of the District.

TCWD is planning to obtain additional customers within the District to convert from domestic water irrigation to recycled water irrigation. During 2004/05 TCWD entered into a joint project with the City of Rancho Santa Margarita to bring recycled water to the City's federally funded grant project – the Plano Trabuco Median Project. The completion of this project will provide recycled water to the City and will allow the District to expand its existing recycled system to several additional homeowners' associations. In addition, this water source has adequate head to serve Santa Margarita Water District's irrigation customers who are connected on Plano Trabuco, and it would be a very economical source of supply for Santa Margarita Water District and these customers.

CHAPTER 4. WATER USE

4.1 HISTORICAL AND PROJECTED WATER USE

Table 12 illustrates Past, Current and Projected Water Use by customer type, including reclaimed/recycled water uses and unaccounted for water or system losses. It should be noted that service connections are actual meters billed by the District and that the 31 multi-family residential connections serve 184 dwelling units, as there is only one meter per each multi-unit building. Future growth in the District is largely planned according to the District's Master Plan and Sub-Area Master Plans, and the Foothill/Trabuco Specific Plan, which provides for no increase in multi-family development.

The Past and Current Water Use is based on District monthly billing records for the years 2000 and 2005. Projected water use for years beyond 2005 is based on population growth, development size, and water use factors as described in each section below.

Residential Sector

In Trabuco Canyon Water District, single-family residential units average 3.3 persons per household and multi-family residential customers average 2.6 per household. For 2005, using the total single-family residential connections of 3,771 results in a per single-family unit consumption of 665 gallons per day (GPD), or about 0.75 AF/Y.

Commercial Sector

The District has only a minimal amount of commercial use including primarily two neighborhood commercial centers with grocery markets, drug stores, banks, fast food establishments, restaurants and related service commercial uses. In addition, there is an office complex and a few other restaurants within the District.

Institutional Sector

The only institutional uses include two schools, a few church/monastery sites, the Joplin Boy's Ranch and a Boy's Town facility scattered throughout the District. No significant growth in this sector is planned.

Landscape/Recreational Sector

This sector consists of homeowner association landscaped slopes, parks and greenbelts, a golf course, and a regional park as well as other miscellaneous non-agricultural irrigation connections. The District currently has 22 recycled water metered connections with three major irrigation users. These three major irrigation users are located in the eastern portion of the District and are Dove Canyon Golf Course, Dove Canyon Master Association, and Trabuco Highlands Community Association. Water audits have been conducted on the major landscaping accounts, and the District has worked closely with these customers to help them in their efforts to conserve water.

Agricultural Sector

This sector includes the two major wholesale nurseries - T Y and Sakaida - which make up the majority of this water use. Both of these nurseries are designated for residential development in the future so this category will all but disappear if these areas are developed, as permitted by the Foothill/Trabuco Specific Plan. These areas are irrigated from private wells or from domestic supplies of the District.

The past, current and projected water deliveries are shown in Table 12.

<p align="center">Table 12 Past, Current and Projected Water Deliveries</p>									
Year	Water Use Sector	Single Family	Multi-Family	Commercial	Industrial	Instit / Gov	Landscape	Agricultural	Total
2000 Metered	# of accounts	3,770	31	67	0	11	108	5	3,992
	Deliveries AF/Y	2,298	30	144	0	26	547	266	3,311
2005 Metered	# of accounts	3,771	31	67	0	11	108	5	3,993
	Deliveries AF/Y	2,850	30	144	0	26	1,254	227	4,531
2010 Metered	# of accounts	4,502	31	67	0	11	175	4	4,790
	Deliveries AF/Y	3,805	30	144	0	26	1,555	140	5,700
2015 Metered	# of accounts	4,723	31	67	0	11	195	4	5,031
	Deliveries AF/Y	4,025	30	144	0	26	1,665	140	6,030
2020 Metered	# of accounts	4,897	31	67	0	11	210	4	5,220
	Deliveries AF/Y	4,200	30	144	0	26	1,732	140	6,272
2025 Metered	# of accounts	5,042	31	67	0	11	215	4	5,370
	Deliveries AF/Y	4,345	30	144	0	26	1,805	140	6,490
2030 Metered	# of accounts	5,110	31	67	0	11	220	4	5,443
	Deliveries AF/Y	4,413	30	144	0	26	1,885	140	6,638

- Notations: 1) Unmetered number of accounts and water deliveries equals zero for all years.
 2) Reclaimed/recycled waters are included in Landscape.
 3) Includes all delivered water plus "unaccounted-for system losses".

4.2 SALES TO OTHER AGENCIES

Table 13 shows that the District distributed 54 acre feet of water to Santa Margarita Water District in the year 2000. The District is currently evaluating opportunities for both domestic and recycled water with Santa Margarita Water District. Studies are planned; however, at this time there is no definite known amount to transfer or exchange.

<p align="center">Table 13 Sales to Other Agencies – AF/Y</p>							
Water Distributed	2000	2005	2010	2015	2020	2025	2030
Santa Margarita Water District	54	0	0	0	0	0	0
Total	54	0	0	0	0	0	0

Source: TCWD data

The additional water uses listed in Table 14 are not applicable to the District, with the exception of recycled water and unaccounted-for system losses which was previously accounted for in the values shown in Table 12.

Table 14 Additional Water Uses and Losses ^{(1) (2)} – AF/Y							
Water Use	2000	2005	2010	2015	2020	2025	2030
Saline barriers	0	0	0	0	0	0	0
Groundwater recharge	0	0	0	0	0	0	0
Conjunctive use	0	0	0	0	0	0	0
Raw water	0	0	0	0	0	0	0
Recycled ³	See Note 3 below						
Other	0	0	0	0	0	0	0
Unaccounted-for system losses ⁴	See Note 4 below						
Total	0	0	0	0	0	0	0

1) Recycled water is classified in Table 4 under landscape deliveries.

2) Unaccounted-for system losses is included in Table 4.

3) Recycled water use, shown below, is already included in Table 12 under the Landscape column.

4) Unaccounted-for system losses, shown below, are included in Single-Family water deliveries in Table 12.
Based on the District's historical data, losses are estimated to be 5% annually.

Water Use	2000	2005	2010	2015	2020	2025	2030
3) Recycled	780	850	956	1,000	1,000	1,000	1,000
4) Unaccounted-for system losses	115	140	190	201	210	217	221

Table 15 is a summary of Tables 12 through 14.

Table 15 Total Water Use – AF/Y							
Water Use	2000	2005	2010	2015	2020	2025	2030
Sums of Tables 12, 13, 14	3,365	4,531	5,700	6,030	6,272	6,490	6,638

CHAPTER 5. WATER DEMAND MANAGEMENT PROGRAM

5.1 INTRODUCTION

The Urban Water Management Planning Act describes two distinct methods of providing information related to Demand Management Measures (DMMs) and meeting the requirements of Water Code Section 10631 (f) and (g): 1) Members of the California Urban Water Conservation Council (CUWCC) may submit annual Best Management Practice (BMP) Activity Reports; or 2) water suppliers who are not members or choose not to submit annual BMP Activity Reports must submit information about their programs, including current activities, scheduled activities, methods of evaluation, savings, and costs.

As mentioned in the cover letter to this plan update, the District is a signatory to the Memorandum of Understanding (MOU) regarding Urban Water Conservation in California, dated September 1991 (and amended thereafter), and is therefore a member the CUWCC. Signatories must submit annual reports to the CUWCC outlining progress towards implementing the Best Management Practices.

5.2 BMP ACTIVITY REPORTS (2003 AND 2004)

As an active reporting member of the CUWCC, the Trabuco Canyon Water District began submitting these annual reports beginning in 1992/93. The two most recent annual California Urban Water Conservation Council Annual Best Management Practices Implementation Reports for 2003 and 2004 are provided as Appendix E in this report. Details from the reports are provided in 5.5, below.

5.3 BMP COVERAGE REPORTS (2003 AND 2004)

The California Urban Water Conservation Council Best Management Practices Coverage Reports for 2003 and 2004 are provided as Appendix F in this report.

5.4 COUNCIL COVERAGE CALCULATOR AND BMP COST-EFFECTIVENESS FORMS

TCWD has not submitted any cost effectiveness exemptions to the CUWCC.

5.5 BMP IMPLEMENTATION IN TCWD'S SERVICE AREA

As a long-standing member of the CUWCC, TCWD is committed to implementing Best Management Practices and water conservation programs. TCWD actively participates in MWDOC's regional programs, enabling economies of scale, providing a more consistent message of efficiency to the public, and assisting in the acquisition of grant funding for program implementation.

The following table provides the BMP#s and Efficiency Measures. BMP#10, Wholesale Agency Assistance Programs, does not apply to the District.

BMP #	EFFICIENCY MEASURE
1	Home Water Surveys
2	Residential Plumbing Fixture Retrofits
3	System Water Audits, Leak Detection and Repair
4	Metering with Commodity Rates
5	Large Landscape Conservation Programs
6	High-Efficient Washing Machine Rebate Programs
7	Public Information Programs
8	School Education Programs
9	Commercial, Industrial, and Institutional Programs
10	Wholesale Agency Assistance Programs
11	Conservation Pricing
12	Conservation Coordinator
13	Water Waste Prohibition
14	Residential ULFT Replacement Programs

A description of TCWD's Best Management Practices that have been implemented or scheduled to be implemented follow.

BMP No. 1 – Water Survey Programs for Single-Family Residential and Multi-Family Residential Customers

Water Surveys. In 2001 TCWD entered into a indoor/outdoor water survey program provided through MWDOC's contractual vendor. Approximately 1,000 customers (37% of the District's residential customer base) were offered surveys, and 64 surveys were completed over a two-year period. The indoor survey included: checking for leaks, checking showerhead and aerator flow rates, and checking toilet flow rates. Necessary replacements were recommended by the vendor. The outdoor survey included: checking irrigation system and times, reviewing or developing irrigation schedule, measuring landscaped, and the total irrigation areas.

During the monthly meter reading process, District staff visually checks all water meters for leaks and make necessary repairs to the District's meter. District staff responds frequently to customer service orders to check for leaks and provides water conservation information to customers at the time of the home visit.

SmarTimer Rebate Program. In 2005 the District entered into a Letter Agreement with MWDOC to participate in this regional program. Under the program, residential customers and small commercial properties are eligible to receive a rebate when they purchase and install a new, state-of-the-art, weather-

based sprinkler timer which has been shown to save 41 gallons per day per residential installation and to reduce runoff and pollution by 49%.

TCWD is eligible to receive 1,354 valves over the life of the program. To date, 20% of the high water users (68 customers) in the Portola Hills development have been provided literature and incentives relating to this program. While no devices have been installed to date, TCWD and MWDOC are continuing efforts to reach a total of 350 customers in 2005. TCWD will continue its efforts to fulfill the coverage requirements for BMP No. 1.

BMP No. 2 – Residential Plumbing Retrofit

TCWD has demonstrated that over 75% of both its single-family accounts and multi-family units constructed prior to 1992 are fitted with low-flow showerheads. It is not anticipated that further low-flow showerhead distribution or installation activity will occur. TCWD is meeting the coverage requirement for this BMP.

BMP No. 3 – System Water Audits, Leak Detection, and Repair

TCWD records daily production and demand data, by zones, and reads all meters on a monthly basis. All metered sales and other system verifiable uses, i.e., backwash, flushwater, and operations and maintenance, are recorded. The unaccounted water loss varies year to year, and is approximately 5% of the total water in the system. TCWD is meeting the coverage requirement for BMP No. 3.

BMP No. 4 – Metering with Commodity Rates for all New Connections and Retrofit of Existing Connections

All of TCWD's water connections are metered and billed based on commodity rates. TCWD is meeting the coverage requirements for BMP No. 4.

BMP No. 5 – Large Landscape Conservation Programs and Incentives

Of the large landscape areas within the District, 100% of the dedicated landscape irrigation meters are under the control of homeowner associations. These homeowner associations have instituted significant water conservation practices within the last five years due to their efforts to control water costs which result in lower homeowner association fees. The three largest homeowner associations are participating in the expansion of the use of recycled water to further reduce the costs to their homeowner associations, resulting in effective use of local resources. The Protector Del Agua Irrigation Management training program has been offered to the large landscape users, and the District will continue to offer this landscape certification program in the future. TCWD will continue to work closely with its large landscape users to effectively use local water resources.

BMP No. 6 – High-Efficiency Washing Machine Rebate Programs

TCWD participates in the High-Efficiency Clothes Washer program that is sponsored by MWDOC and MET. Rebates offered by Southern California Edison are on a first-come, first-serve basis, while funds last. Over the past four years, 207 residences, or about 6% of single-family residences, have installed high-efficiency

clothes washers through this local conservation program. TCWD continues to provide information to single-family and multi-family residences of the availability of the rebate programs.

BMP No. 7 – Public Information Programs

TCWD maintains a very active public information program to promote and educate customers about water conservation. For the past 11 years the District has published and forwarded its monthly newsletter, *ON-TAP*, to all customers. Water conservation is a key component of the text of the newsletter, and an irrigation watering table is provided in the newsletter. Brochures regarding water-wise gardening are made available to all customers. TCWD recently constructed a demonstration garden consisting of native California drought-resistant plants at its wastewater reclamation plant. To further educate its customers, TCWD is currently working with MWDOC to obtain a grant to remove the existing landscape at its Administrative Facility and replace the plant palette with native California plants.

Each year the District publishes and distributes its Water Quality Report that is required by the California Department of Health Services. Water use efficiency and conservation information is included in the report along with water quality data. TCWD is meeting the coverage requirements for BMP No. 7, and will continue to actively promote and educate its customers concerning water conservation.

BMP No. 8 - School Education Programs

BMP No. 8 focuses on the implementation of a school education program to promote water conservation and water conservation-related benefits. TCWD participates in MWDOC's highly successful and well-recognized water-education curriculum that has been in existence since 1973. During fiscal year 2003/04, MWDOC made nine presentations to students within TCWD's service area. A total of 711 students were reached (497 students K-3 and 214 students in grades 4-6). TCWD is meeting the coverage requirements for BMP No. 8.

BMP No. 9 – Conservation Programs for Commercial, Industrial and Institutional Accounts

The goal of BMP No. 9 is to identify and rank commercial, industrial, and institutional customers according to use and to establish long-term implementation targets for the replacement of high-water-using toilets with ULFTs in the CII sector. TCWD has no industrial accounts within its service area. Commercial accounts, including the institutional category, total only 68. During FY 2004/05, six customers, or almost 10% of the 68 commercial customers targeted, installed a water saving plumbing fixture. TCWD will continue to educate this account category to meet the requirements of this BMP.

BMP No. 10 – Wholesale Agency Assistance Program

This BMP does not apply to Trabuco Canyon Water District.

BMP No. 11. Conservation Pricing

At the present time, TCWD has uniform (flat) pricing for all water with the exception of its agricultural rate that currently increases by 12% from July through November.

Conservation Encouragement Rate Program (CERP)

The Conservation Encouragement Rate Program (CERP) is being implemented over a three-year period. The CERP encourages customers, through a tiered warm and cool season rate structure, to conserve water. The goals of the program include:

- Encouraging water conservation
- Encouraging best management watering practices
- Recovering the true costs associated with excessive water use, and
- Avoiding the need to purchase additional water supply.

Agricultural CERP

The Board of Directors adopted the Agricultural CERP to be effective January 1, 2006. The Agricultural CERP has two rate periods - Non-peak (January through June) and Peak (July through December). The rates are provided in the table below.

Non Peak Rate		Peak Rate	
Billing Units Per Acre	BU Cost	Billing Units Per Acre	BU Cost
0 – 30	\$2.12	0 – 36	\$2.12
31 – 60	2.65	37 – 72	2.83
61 – 90	3.18	73 – 108	3.53
91 – 150	3.71	109 – 144	4.24
150 plus billing units	4.24	144 plus billing units	4.94

Source: TCWD data

Residential CERP

The Residential CERP will encourage customers, through an eight-tiered cool and warm season rate structure, to conserve water. The Residential CERP rates, shown in the tables below, will be effective January 1, 2007.

COOL SEASON (OCTOBER – MARCH)

Billing Units

43 Plus								2.99
37-42						2.49	2.49	
31-36					2.24	2.24	2.24	
25-30				1.99	1.99	1.99	1.99	
19-24			1.99	1.99	1.99	1.99	1.99	
13-18		1.99	1.99	1.99	1.99	1.99	1.99	
7-12	1.99	1.99	1.99	1.99	1.99	1.99	1.99	
0-6	1.89	1.89	1.89	1.89	1.89	1.89	1.89	
% Change	-5%	0%	0%	0%	0%	12.5%	25%	50%

WARM SEASON (APRIL - SEPTEMBER)

Billing Units

64 Plus								2.99
55-63						2.49	2.49	
46-54					2.24	2.24	2.24	
37-45				1.99	1.99	1.99	1.99	
28-36			1.99	1.99	1.99	1.99	1.99	
19-27		1.99	1.99	1.99	1.99	1.99	1.99	
10-18	1.99	1.99	1.99	1.99	1.99	1.99	1.99	
0-9	1.89	1.89	1.89	1.89	1.89	1.89	1.89	
	-5%	0%	0%	0%	0%	12.5%	25%	50%

Source: TCWD data

TCWD currently meets the requirements of BMP No. 11 and will report the success of its conservation efforts of the Agricultural and Residential CERPs in future reporting years.

BMP No. 12 – Conservation Coordinator

The District has a designated water conservation coordinator; the District meets the coverage requirement of this BMP.

BMP No. 13 – Water Waste Prohibitions

The District adopted Ordinance No. 91-14 in 1991. Details of the Ordinance are provided under Chapter 6, Water Shortage Contingency Plan, Mandatory Water Use Prohibitions. Mandatory prohibitions are contained in a three-stage plan to meet up to a 50% reduction in consumptive limits and contain penalties for excessive use. The mandatory prohibitions apply to all customers. While the District has not met all the coverage requirements of BMP No. 12, it is noted that there are no single-pass cooling systems and commercial laundry systems located within the District service area so these prohibitions are not applicable. Only one car wash is located within the service area. The Board of Directors is scheduled to review and consider an updated Water Waste Ordinance in early 2006 which will enable the District to meet all the requirements of this BMP.

BMP No. 14. – Residential ULFT Replacement Program

Over the past 13 years, MWDOC has continuously implemented regional ULF Toilet Rebate and/or Distribution targeting single- and multi-family homes in Orange County. TCWD encourages customer participation in this program. 571 ULT toilets have been replaced within the District’s service area, representing over 15% of the District’s residences. The cumulative water savings across the years is 88 acre feet. It is noted that the majority of the housing units have been constructed after 1985 when low flow toilets were mandated. The District meets the coverage requirements for BMP No. 14.

5.5 DETERMINATION OF IMPLEMENTATION

As shown on Table 16, TCWD does not have any DMMs (BMPs in TCWD’s case) that are not currently being implemented or that are not scheduled for implementation.

Table 16 Evaluation of Unit Cost of Water Resulting from Non-implemented DMMs and Planned Water Supply Project and Programs	
Non-implemented/Not Scheduled DMM	Per-AF Cost (\$)
Not applicable	\$0

Source: TCWD staff

CHAPTER 6. PLANNED WATER SUPPLY PROJECTS AND PROGRAMS

Table 17 has been adapted from MWDOC's UWMP and shows the projects that are in progress to meet the projected water use for the region. If implemented, these projects would decrease dependency and/or increase the reliability of supply of imported water of which TCWD is a recipient.

The table provides the estimated timeline, projected supply, and expected reliability in single-dry and multiple dry years of the projects listed.

6.1 DESALINATION

As shown in Figure 1.1, the District's service area is located in the foothills and canyon areas and not near the Pacific coast. Table 18 shows that there are no sources of water that are near the ocean or any brackish ocean water aquifer, brackish groundwater nor impaired groundwater basin within the District's service area. Thus, it would be non-economical and non-feasible to pursue desalination as an additional source of supply.

Table 18 Opportunities for Desalinated Water				
Sources of Water	Yield AF/Y	Start Date	Type of Use	Other
Ocean Water	N/A			
Brackish Ocean Water	N/A			
Brackish Groundwater	N/A			
Other (such as impaired groundwater)	N/A			
Other	N/A			

Source: TCWD staff projections

6.2 DATA PROVIDED TO WHOLESALE AGENCY

Table 19 shows the amount of water supply demands projected by the District. The values shown in Table 19 were provided to MWDOC, the District's wholesale supplier.

Table 19 Agency Demand Projections Provided to Wholesale Suppliers – AF/Y					
Wholesaler	2010	2015	2020	2025	2030
MWDOC	4,542	4,818	5,058	5,269	5,400

Source: TCWD staff projections

Table 20 shows the quantified amounts of water available to the District from MWDOC. These values meet the District's demand projections as previously shown in Table 19.

Table 20 Wholesaler Identified & Quantified the Existing and Planned Sources of Water – AF/Y					
Wholesaler	2010	2015	2020	2025	2030
MWDOC	4,542	4,818	5,058	5,268	5,400

Source: MWDOC

Based on MWDOC's reliability analysis of water supply, the District's water demands will be met for single dry and multiple dry years. The percentage values shown in Table 21 were provided to the District and show that up to 110 percent of the District's normal water demands will be met for a single dry year. For multiple dry years, between 103 and 111 percent of the District's normal water demands will be met.

Table 21 Wholesaler Supply Reliability - % of Normal AFY					
	Single Dry		Multiple Dry Water Years		
Wholesaler sources		1961	Year 1 (1959)	Year 2 (1960)	Year 3 (1961)
MWDOC	2010	111%	104%	103%	111%
MWDOC	2015	110%	110%	106%	110%
MWDOC	2020	110%	110%	106%	110%
MWDOC	2025	110%	110%	106%	110%
MWDOC	2030	110%	110%	106%	110%

Source: MWDOC

Table 22 shows the various factors evaluated by MWDOC that could result in inconsistent water supplies. Climatic changes were the only factors identified by MWDOC that would result in an inconsistent supply of water.

Table 22 Factors Resulting in Inconsistency of Wholesaler's Supply				
Name of Supply	Legal	Environment	Water Quality	Climatic
MWDOC				X

Source: MWDOC

CHAPTER 7. WATER SHORTAGE CONTINGENCY PLAN

7.1 INTRODUCTION

Water shortages may result from variations in weather and natural and unnatural catastrophes, such as, but not limited to, pipeline failures, transmission facility failures, supply contamination, and earthquakes. Discussion in this chapter focuses on TCWD's water shortage planning efforts.

Imported water available to TCWD during periods of drought will be subject to MWDOC's and MET's regional water supply plans. MWDOC, in their draft 2005 UWMP – Section 7, has indicated that they will follow MET's Water Surplus and Drought Management Plan for the management of its imported water which will guide the management of regional water supplies to achieve reliability goals. MWDOC is also responsible for how imported water will be allocated to each member agency, which will then determine specific stages of storage actions in accordance with local ordinances.

In April of 1999, the MET Board of Directors adopted the Water Surplus and Drought Management Plan (WSDM Plan). The plan guides management of regional water supplies to achieve the reliability goals of Southern California's Integrated Resources Plan. Through effective management of its water supply, MET fully expects to be 100 percent reliable through the next ten years.

The guiding principle of the WSDM Plan is to minimize adverse impacts of water shortage to retail customers. From this guiding principle come the following supporting principles:

- Encourage efficient water use and economical local resource programs
- Coordinate operations with member agencies to make as much surplus water as possible available for use in dry years
- Pursue innovative transfer and banking programs to secure more imported water for use in dry years
- Increase public awareness about water supply issues

The WSDM Plan distinguishes between Surpluses, Shortages, Severe Shortages, and Extreme Shortages. Within the WSDM Plan, these terms have specific meaning relating to MET's capability to deliver water to MWDOC and its member agencies such as TCWD.

MET has defined conditions for providing water to its various types of customers and member agencies. These are as follows:

Surplus: MET can meet full-service and interruptible program demands, and it can deliver water to local and regional storage.

Shortage: MET can meet full-service demands and partially meet or fully meet interruptible demands, using stored water or water transfers as necessary.

Severe Shortage: MET can meet full-service demands only by using stored water, transfers, and possibly calling for extraordinary conservation. MET may curtail Interim Agricultural Water Program deliveries.

Extreme Shortage: MET must allocate available supply to full-service customers.

The WSDM Plan also defines five surplus management stages and seven shortage management stages to guide resource management activities. Each year, MET will consider the level of supplies available and existing levels of water in storage to determine the management actions to 1) avoid an Extreme Shortage to the maximum extent possible, and 2) minimize adverse impact to retail customers should an Extreme Shortage occur. MET has also outlined in the WSDM Plan the sequencing of actions that will be taken based on detailed modeling of their existing and expected resources. These actions include, but are not necessarily limited to, surface storage management/withdrawal, groundwater storage/withdrawal, curtailment of groundwater replenishment storage programs, purchase of option contracts, and differing levels of conservation.

7.2 TCWD's WATER SHORTAGE CONTINGENCY PLAN

In 1992 TCWD adopted its Water Shortage Contingency Plan (WSCP) in response to California Assembly Bill No. 11. The purpose of the WSCP is to conservatively manage its water resources to be able to provide water to its customers, on an equitable and business-sound basis, in the event that water supplies to the District are curtailed by as much as 50%. The WSCP provides measures to reduce normal operational losses and facilitates the reduction in end-user demand.

7.3 ACTION STAGES

The TCWD has a three-stage plan to meet up to a 50% reduction in water supply. The stages of the WSCP are summarized in Table 23. The details of each phase's mandatory conservation actions are covered in Ordinance No. 91-14, adopted by the TCWD Board on April 17, 1991 (**Appendix C**). Included in Ordinance No. 91-14 are Consumptive Limits for the most restrictive stages (Phases II and III), and Penalties and Charges for excessive use. Table 23 outlines the water supply shortage stages and conditions.

Table 23 Water Supply Shortage Stages and Conditions		
Stage No.	Water Supply Conditions	% Shortage
Phase I	Compliance—With Conservation Rates (Probability exists that TCWD will not be able to meet all water demands)	0%
Phase II	Compliance—With Enforcement Procedures and Cost Recovery Fee (TCWD will not be able to meet all water demands)	20% plus
Phase III	Compliance—Water Emergency (MET mandates or major failure of any supply or distribution facility occurs in water distribution system or any agency supplying water to TCWD)	50% plus

Source: TCWD Ordinance No. 91-14.

7.4 THREE-YEAR MINIMUM WATER SUPPLY

Through its modeling efforts, MWDOC has determined minimum water supplies available for retail consumption for each of the next three years, 2006-2008. Table 24 compares supplies available under normal conditions and supplies available under a hypothetical repeat of the historical driest three-year period for MWDOC's service area, 1959-1961. Typically during multiple dry years, less local supplies are available for retail consumption, and retail demands increase, resulting in the use of increased imported supplies from MWDOC to offset the reduction in local supplies. However, as shown on Table 24, based on available recycled water storage, TCWD's local supply from 2006 to 2008 is not expected to decrease.

MWDOC is expected to meet TCWD's retail consumption during a three-year dry period of 2006-2008 based on the three driest years on record. MET is expected to be able to supply all of MWDOC's imported water during the same period. MET's 2005 Regional Urban Water Management Plan (Draft) indicates that MET can provide 100% of the supply demanded by its member agencies through 2030.

Table 24 Three-Year Estimated Minimum Water Supply – AF/Year						
Source	Normal			Multiple Dry Year		
	2006	2007	2008	2006	2007	2008
Local Supplies	1,087	1,087	1,143	901	991	992
Imported Supply	3,656	3,983	4,165	4,174	4,237	4,632
Total	4,743	5,020	5,308	5,075	5,228	5,623

Source: As provided by wholesale supplier, Municipal Water District of Orange County

7.5 CATASTROPHIC SUPPLY INTERRUPTION PLAN

In 1983 the Orange County water community developed a Water Supply Emergency Preparedness Plan to respond effectively to disasters impacting the regional water distribution system. The Water Emergency Response Organization of Orange County (WEROC) was formed to coordinate emergency response on behalf of all Orange County water agencies.

For local emergency response, TCWD developed and adopted its Emergency Preparedness Plan in 1990 to meet emergencies within its service area and has updated the plan as necessary. The purpose of the plan is to provide information on District operations, assign responsibilities, and establish general policies and procedures associated with operations during natural disasters, technological incidents, and nuclear defense emergencies.

Table 25 summarizes possible catastrophe scenarios and actions that would be taken in response to a catastrophe.

Table 25 Preparation Actions for a Catastrophe	
Possible Catastrophe	Summary of Actions
Regional Power Outage	Coordinate with So. Ca. Edison. TCWD owns and operates standby generators for emergency backup power. Regarding water quality concerns and public notices, staff would consult with the California Department of Health Services.
Earthquake	Establish communications with MWDOC, MET, So. Ca. Edison and So. Ca. Gas Co.
Diemer Plant Shutdown (AMP Source)	Inter-ties with 4 neighboring districts; full reservoirs; notification to customers to curtail water use.
Wild Land Fire	Maintain storage level in reservoirs; coordinate with Orange County Fire Authority to ensure that they have sufficient water for fire flow. Identify available emergency generators for backup power supply.
Water Contamination	Contamination can be from multiple sources: malicious, sewer leak, underground contaminate plume, etc. Consult with California Department of Health Services and local laboratory to identify the contaminate and action needed. Reroute water where possible through neighboring agencies, and provide water haulers as needed. Work with media to ensure that proper information is provided to the public for their health and safety.
Malicious Act	Coordinate with the California Department of Health Services and public information officials.
Dam Failure	Coordinate with the local law enforcement. Identify water losses and what the loss means for TCWD during the current weather season and conditions. Evaluate the need and ability for immediate reconstruction and restoration of services.
Flooding	Take measures to maintain fire flow if major line break occurs. Coordinate with the County of Orange for flood control support.
Tsunami	Offer personnel support to coastal agencies.
Hazardous Materials Spill/Release	Coordinate with local law enforcement for evacuation, if necessary. Coordinate for the cleanup of a sewer spill.

Source: TCWD Emergency Preparedness Plan and MWDOC's UWMP

7.6 PROHIBITIONS, PENALTIES AND CONSUMPTION REDUCTION

7.6.1 Mandatory Water Use Prohibitions

TCWD has developed and adopted a specific water shortage management plan to meet targeted reduction in total water demand during a shortage. Mandatory prohibitions on water usage during water shortages established in Ordinance No. 91-14 apply to all District customers. Mandatory prohibitions met through targeted reductions in total water demand during a shortage will also benefit customers on a regional basis.

Table 26 lists examples of prohibitions in Ordinance No. 91-14 and the stage when the prohibition becomes mandatory.

Table 26 Mandatory Prohibitions	
Examples of Prohibitions	Stage When Prohibition Becomes Mandatory
Using potable water for washing paved areas	I
Adjust sprinklers/irrigation systems to avoid overspray/runoff/waste	I
Greenbelt areas/existing slopes watered 2 days/week during non-peak hours	I
Limit water use from fire hydrants to fire fighting (curtail construction water use)	I
Washing of vehicles/mobile equipment limited to hand-held bucket or hand/held hose with a positive shot-off nozzle for quick rinses	I
Concrete areas in development projects must be broomed	I
Restaurants shall not serve water except when specifically requested to do so	I
Moratorium on slope planting; no meters issued	I
Water recycling system mandatory for decorative fountains	I
Failure to repair indoor/outdoor leaks	I
Two-tiered billing structure established based on area consumption ranges, by meter size	I
Use of any water for construction must be pre-approved by the General Manager	II
Violation warnings issued/charge a fee to recover costs	II
Prohibit use of water for construction purposes	III

Source: TCWD Ordinance No. 91-14

7.6.2 Water Reduction Methods

Reductions in water consumption by TCWD during water shortages will ultimately reduce MWDOC's overall demands on MET. TCWD's Board of Directors has the authority within Ordinance No. 91-14 to provide Consumption Reduction Methods of allocating available supplies as the Board deems necessary. The methods apply to all classes of service.

Water consumption figures are compiled monthly. In order to implement reduction, TCWD has available personnel to read meters of large irrigation users (81 meters) and agricultural users (6 meters) frequently to ascertain usage during the three phases listed in Table 27.

<p style="text-align: center;">Table 27 Consumption Reduction Methods</p>		
Consumption Reduction Method	Stage When Method Takes Effect	Projected Reduction (%)
Compliance with conservation rates	I	10%
Agricultural water restricted to 70% of individual water user's average for base year	I	30%
All customers cut back water consumption by 20% of the pre-established range	II	20%
Agricultural water restricted to 50% of individual water user's average	II	50%
All customers cut back water consumption by 50% of pre-established range	III	50%
Agricultural water use restricted to 10% of individual water user's average	III	90%

Source: TCWD Ordinance No. 91-14

7.6.3 Penalties for Excessive Water Use

If MET allocates imported water during a severe water shortage, as identified in Stage 7 of its Water Surplus and Drought Management Plan, MET can impose surcharges (penalty pricing) on water consumption in excess of the imported water allocation. Also, MWDOC has the authority to adjust water rates to reflect any penalties imposed by MET.

TCWD's Ordinance mandates that the General Manager impose surcharges (penalties) on water consumption during all phases of a water emergency by establishing a two-tiered billing structure based on area consumption ranges by meter size. Averages will be based on a non-peak and peak season. A surcharge per billing unit (one hundred cubic feet of water) will be assessed for usage above the average for each billing type. The surcharge will be based on the penalty charged by MET for agencies exceeding pre-determined water allocations. The penalties and charges are shown in Table 28.

<p style="text-align: center;">Table 28 Penalties and Charges</p>	
Penalty or Charge	Stage When Penalty Takes Effect
Water violation surcharge, based on labor costs, investigation costs, and administrative fees, for excess use after third violation issued.	May apply in any phase
Discontinuation of water service after fourth offense. Labor surcharge to shut off and turn on the meter shall be paid by the customer prior to restoration. Current fees are \$30.00 during business hours and \$50.00 after business hours.	May apply in any phase

Source: TCWD Ordinance No. 91-14; MWDOC's UWMP.

It should be noted that no conservation was mandated during the past ten years. However, during the 1990-1995 UWMP period, the District reduced consumption by over 50% in 1991/92 when adjusted for growth and compared to 1989/90 usage (pre-drought).

7.7 REVENUE IMPACTS ON REDUCED SALES

The Actions and Conditions that Impact Revenues and Expenditures, shown below, are based on the audited financials for the year ended June 30, 2004. (Fiscal Year 2004/05 is not used as it is not considered a normal year due to excessive precipitation.) The anticipated projected percentage reductions for Phase I, II, and III are those used in Table 27.

Actions and Conditions that Impact Revenues

Type	Anticipated Revenue Reduction, Per Year (FY 2003/04)		
	Phase I	Phase II	Phase III
Supply Reduction Phase			
% Water Reduction (Depending on water category)	10% to 30%	20% to 50%	50% to 90%
Agricultural Water	(\$ 64,422)	(\$107,370)	(\$193,266)
Single-Family Residential	(\$181,062)	(\$362,124)	(\$905,311)
Multi-Family Residential	(\$ 2,738)	(\$ 4,876)	(\$ 13,692)
Irrigation	(\$ 52,862)	(\$105,725)	(\$264,312)
Commercial	(\$ 11,466)	(\$ 22,932)	(\$ 57,331)
Total Anticipated Reduction in Domestic Water Sales	(\$312,550)	(\$603,027)	(\$1,433,912)

Source: TCWD's Audited Financials for year ended June 30, 2004

Both fixed and variable expenses were reviewed at FY ended June 30, 2004 to determine the impact on expenditures. Fixed expenses for Conservation Phases II and III include the expense of one additional employee (temporary) to help monitor and enforce mandatory conservation measures. The anticipated cost assumes the salary and mandated benefits (FICA/Medicare, workers' compensation insurance, and unemployment insurance) and uniform rental for a temporary employee for one year. The increase in Operations and Maintenance includes additional fuel, uniforms, tools, cellular telephone, safety equipment, as well as administrative costs for training and employee support. Energy and water purchases are considered to be variable expenses that would decrease during all phases of a water shortage.

Actions and Conditions that Impact Expenditures

Category	Anticipated Cost, Per Year		
	Phase I	Phase II	Phase III
Supply Reduction Phase			
Labor for Monitoring Employee (fixed cost)	--	\$ 37,352	\$37,352
Increase Operations and Maintenance for additional employee	--	\$ 6,000	\$ 6,000
MET/MWDOC cost increase	--	^a	^a
Decrease in energy	(\$36,796)	(\$73,592)	(\$183,980)
Decrease in water purchase	(\$116,069)	(\$232,138)	(\$580,347)

Source: TCWD's Audited Financials for year ended June 30, 2004

^{a)} In the event the District as a whole exceeds criteria or conditions mandated by MET or MWDOC, additional costs, penalties and fees would be added.

As shown in Table 29, anticipated shortfalls in projected revenue, due to water supply shortages, would need to be covered through increased water rates and an advance from District set-aside funds.

Table 29 Proposed Measures to Overcome Revenue Impacts	
Names of Measures	Summary of Effects
Rate adjustment / CERP	The tiered rate structure relating to the CERP would be adjusted to recapture a portion of lost revenue. The CERP effects both the agricultural and residential water users.
Advance from set-aside funds	The District has established a Water Rate Stabilization Fund to be used in times of drought and emergencies to offset the loss of revenue. The District could also advance funds from its Board-approved set-aside funds to assist in recapturing the loss of revenue.

Source: District staff

Measures to overcome expenditure impacts relate to the Board approved FY 2005/06 General Fund and Capital Improvement Program budgets. The measures and estimated dollar savings are provided in Table 30.

Table 30 Proposed Measures to Overcome Expenditure Impacts	
Names of Measures	Summary of Effects
Curb all discretionary spending	Discretionary spending is not considered to be a significant budget item. Decrease of \$25,000.00 per year.
Reduce training/conference attendance	Decrease of \$5,000.00 per year.
Delay Capital Improvement Program	The FY 05/06 Capital Improvement Program totals approximately \$555,000. The program could be delayed a year without having an adverse affect on the operations and maintenance of the District.
Delay purchase of budgeted items (i.e., computer/office equipment/voice mail/furniture & fixtures)	Approximately \$10,000.00 per year would be saved.
Delay purchase of two vehicles	Savings of approximately \$25,000.00

Source: TCWD's Board approved FY 2005/06 General Fund Operating Budget and Capital Improvement Program

7.8 WATER USE MONITORING PROCEDURES

Monitoring mechanisms would be put in place to record the actual reduction in water use, as defined in Table 31.

Table 31 Water Use Monitoring Mechanisms	
Mechanisms for Determining Actual Reductions	Type and Quality of Data Expected
Water meter auditing	Actual reduction of water used for meters over 1-inch
Monitor daily production/distribution records	Daily production and distribution records would be monitored. The data is recorded by zone which would enable District staff to determine which zone was using more water than expected. Customers would be alerted to actual water use (increase/decrease).
Monitor 10-inch reclaimed meters	Two 10-inch meters would be monitored on a daily basis during a mandatory cut back.
Monitoring Employee	The temporary employee would monitor all unnecessary domestic irrigation use and serve on the “dawn” patrol to verify that residences and irrigation customers are not over watering in the early hours of the day.

Source: District staff

CHAPTER 8. RECYCLED WATER PLAN

8.1 INTRODUCTION

The District's recycled water plan consists of optimizing its two sources of recycled water. These two sources are reclaimed water produced at the District's Robinson Ranch Water Reclamation Plant (RRWRP) and treated water from Dove Lake.

The RRWRP was originally constructed in 1983 to provide wastewater treatment for the initial developments on the east side of the District. As the District grew, the water reclamation plant was increased in capacity and upgraded to meet recycled water requirements for landscape irrigation. Currently, the RRWRP reclaims about 780,000 gpd of wastewater that is utilized to irrigate the Dove Canyon Country Club golf course as well as parks, greenbelts and open space in Dove Canyon, Robinson Ranch, Trabuco Highlands and Sakaida Nursery. The RRWRP produces tertiary treated effluent that meets California Administrative Code, Title 22, Division 4 criteria for recycled water. Reclaimed water is stored in the District's reclaimed water storage reservoir and pumped to two different pressure zones, Dove Canyon to the south and Robinson Ranch to the north.

Recycled water demands are also supplemented with treated water from Dove Lake. Treated water is pumped to the RRWRP reservoir where it is blended with reclaimed water prior to distribution in the recycled water system. The District owns all the water in the 500 acre foot lake. The quantity of water taken from Dove Lake fluctuates with the weather and local irrigation, typically averaging about 100 acre feet per year. Dove Lake water will continue to be used to meet the recycled water demand, as necessary. During an extreme or catastrophic event, the District could pump all the water from Dove Lake into its recycled water system to meet the recycled water system demands.

8.2 WASTEWATER QUANTITY, QUALITY, AND CURRENT USES

Trabuco Canyon Water District operates separate collection systems in the western and eastern portions of its service area. As mentioned previously, the eastern portion discharges to the RRWRP where the effluent is treated to Title 22 standards, stored in the open reservoir adjacent to the plant and then distributed to irrigation customers in the Dove Canyon and Robinson Ranch/Trabuco Highlands areas. In the western portion of the District, TCWD operates a collection system that collects sewage from customers of Irvine Ranch Water District (IRWD) in Portola Hills and customers of Santa Margarita Water District (SMWD) in the Meadow Ridge development for ultimate discharge to the Chiquita Sewage System owned and operated by SMWD, where it is recycled for landscape irrigation or discharged to the ocean via an outfall in Dana Point. However, the District is currently working with IRWD to divert this wastewater to the Los Alisos Water Reclamation Plant where the wastewater will either be reclaimed for landscape irrigation or treated and discharged to the ocean via the same ocean outfall as SMWD. By diverting the wastewater to the Los Alisos

Water Reclamation Plant, significant pumping of wastewater would be avoided while continuing to provide an additional source of recycled water. The central portion of the District is currently unsewered as the 250 or so existing equivalent dwelling units are on septic systems or a small package treatment plant in the case of the Joplin Boy's Ranch.

Currently, the District's Master Plan calls for expansion of the existing RRWRP in logical increments to serve the remaining proposed development in the eastern and central portion. As the area in the central portion of the District develops, it is contemplated that sewers will be added in the areas that are currently served by septic systems. As the reclamation plant is expanded, additional seasonal storage facilities will be needed along with an expanded non-domestic irrigation distribution system to match the plant capacities. In this manner, the District can ultimately reclaim all sewage generated in the central and eastern portion. Table 33 shows the existing and projected wastewater collected and treated in the RRWRP service area, in five-year increments to 2030.

Table 33 Wastewater Collected and Treated – AF/Year							
	2000	2005	2010	2015	2020	2025	2030
Wastewater collected & treated in service area	780	850	956	1,000	1,000	1,000	1,000
Quantity that meets recycled water standard	780	850	956	1,000	1,000	1,000	1,000

Source: TCWD billing records and staff projections

For 2005 and beyond, the District projects that all the wastewater collected within the RRWRP would be treated and recycled for landscape irrigation with no other methods of disposal as shown in Table 34. The existing plant flow is averaging 780,000 gallons per day (gpd) but is rated for 850,000 gpd by the Regional Water Quality Control Board.

Table 34 Disposal of Wastewater (Non-recycled) AF/Y							
Method of Disposal	Treatment Level	2005	2010	2015	2020	2025	2030
Not Applicable	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: TCWD staff projections

8.3 POTENTIAL AND PROJECTED USE

Proposed land use zoning in the District is primarily estate to low-density residential development with substantial irrigation demands such that the non-domestic landscape irrigation demands are at least as high as the sewage generated. Therefore, if the non-domestic irrigation system is expanded into these development areas, the recycled water can be used on parks, greenbelts, slopes and fire fuel modification zones in these new developments. Construction of these systems along with expansion of the RRWRP and additional seasonal storage capacity is a requirement of new developments in the central and eastern portion of the District.

Since existing collection and treatment capacity has already been purchased by the majority of the landowners in the western portion of the District (SMWD Chiquita System), it is not anticipated that the wastewater generated in this area will be recycled in TCWD. Other areas of future growth include developments in the canyon that consist of dwelling units on septic systems which are not expected to contribute to recycled water supplies. In summary, the District currently reuses all of the effluent treated at the RRWRP and plans to continue to reuse all its recycled water as shown or described in the following tables.

Tables 35a shows the actual AF/Y recycled water uses for 2005, and Table 35b shows potential recycled water uses in five-year increments as well as the minimum treatment level required. It should be noted that TCWD currently provides tertiary treatment to comply with Title 22 requirements and is planning on providing this same level of treatment on future expansions.

Table 35a Recycled Water Uses – Actual AF/Y		
Type of Use	Treatment Level	2005 AF/Y
Agriculture	Title 22	21
Landscape	Title 22	829
Wildlife Habitat	N/A	N/A
Wetlands	N/A	N/A
Industrial	N/A	N/A
Groundwater Recharge	N/A	N/A
Total		850

Source: TCWD production records

Table 35b Recycled Water Uses – Potential AF/Y						
Type of Use	Treatment Level	2010	2015	2020	2025	2030
Agriculture	Title 22	0	0	0	0	0
Landscape	Title 22	956	1,000	1,000	1,000	1,000
Wildlife Habitat	N/A	N/A	N/A	N/A	N/A	N/A
Wetlands	N/A	N/A	N/A	N/A	N/A	N/A
Industrial	N/A	N/A	N/A	N/A	N/A	N/A
Groundwater Recharge	N/A	N/A	N/A	N/A	N/A	N/A
Total		956	1,000	1,000	1,000	1,000

Source: TCWD staff projections

Table 36 shows the projected future use of recycled water within the RRWRP service area in five-year increments for the years 2010 to 2030. These are based on planned recycled water projects that meet future plant capacity and are feasible based on the potential type of use as those described in Table 35b.

Table 36 Projected Future Use of Recycled Water in Service Area – AF/Y					
Type of Use	2010	2015	2020	2025	2030
Agriculture	0	0	0	0	0
Landscape	956	1,000	1,000	1,000	1,000
Wildlife Habitat	N/A	N/A	N/A	N/A	N/A
Wetlands	N/A	N/A	N/A	N/A	N/A
Industrial	N/A	N/A	N/A	N/A	N/A
Groundwater Recharge	N/A	N/A	N/A	N/A	N/A
Other					
Total Projected Use of Recycled Water	956	1,000	1,000	1,000	1,000

Source: TCWD staff projections

Table 37 shows the 2000 projection for 2005 compared to the 2005 actual AF/Y usage. While the projection was met, it is noted that there was a slight increase in landscape irrigation and a corresponding decrease in agriculture use. For 2005, it should be noted that because of wet weather conditions in late 2004 and early 2005, local groundwater supplies were plentiful. Therefore local agricultural users, with private wells, increased their groundwater use and supplemented much less with recycled water.

Table 37 Recycled Water Uses – 2000 Projection Compared with 2005 Actual – AF/Y		
Type of Use	2000 Projection for 2005	2005 Actual Use
Agriculture	40	21
Landscape	810	829
Wildlife Habitat	N/A	N/A
Wetlands	N/A	N/A
Industrial	N/A	N/A
Groundwater Recharge	N/A	N/A
Other	N/A	N/A
Total	850	850

Source: TCWD historical data

8.4 OPTIMIZATION AND INCENTIVES FOR RECYCLED WATER USE

Actions to Encourage Use of Recycled

The District has experienced little resistance to the development of a recycled water system and the expansion of the recycled water service area. Conversion of areas from domestic water irrigation to recycled water irrigation has met with favorable reaction in the community due primarily to the lower rates and increased reliability during periods of drought.

Plan for Optimizing the Use of Recycled Water

As mentioned previously, the District cannot convert too many more areas to recycled water without having additional effluent to treat and additional seasonal storage available. As the flow to the RRWRP increases, the most cost-effective areas in the Robinson Ranch/Trabuco Highlands area will be converted over from domestic to recycled water irrigation. As the RRWRP is expanded, these new developments areas in the eastern and central portion of the District will be constructed with a separate recycled water irrigation system. It is highly possible that until flows increase as new units are occupied, irrigation demands from these new areas may have to be initially supplemented with domestic water or available lake water, both of which are current options for supplementing recycled water demands.

Irrigation customers are required to tie into the recycled system and use recycled water when it is available. At the present time the cost of recycled water is 75% of the domestic water rate. As shown in Table 38, this financial incentive of purchasing recycled versus domestic water is the primary incentive to encourage the use of recycled water.

Table 38 Methods to Encourage Recycled Water Use					
Actions	AF of Use Projected to Result from This Action				
Financial Incentives (Cost is up to 75% of domestic water rate)	2010	2015	2020	2025	2030
	956	1,000	1,000	1,000	1,000
Total	956	1,000	1,000	1,000	1,000

Source: TCWD staff projections

CHAPTER 9. WATER QUALITY IMPACTS ON RELIABILITY

9.1 INTRODUCTION

Trabuco Canyon Water District has a variety of water sources for meeting its current and projected water demands. These sources consist of imported wholesale water supplies, local groundwater, and recycled water. The District's local water supplies and imported water supplies comply with the California Title 22 Drinking Water Standards and federal requirements of the Safe Drinking Water Act. The District conducts monitoring of its potable water distribution system as well source water monitoring of its imported and local water supplies.

9.2 IMPORTED WATER QUALITY IMPACTS ON RELIABILITY

In coordination with MWDOC, the District imports treated and untreated surface water from MET. The following is adapted from MWDOC's Draft UWMP section 3.3.3. Imported Water Quality Impacts on Supply Reliability.

Through its management strategies and in coordination with member agencies, Metropolitan is able to provide member agencies supply options that allow local agencies to meet regulatory standards. Currently, known and foreseeable water quality issues are already incorporated into existing management strategies and the reliability of Metropolitan's supplies for the next 25 years. However, unforeseeable water quality issues could potentially alter Metropolitan water and potentially impact its supply reliability.

9.3 LOCAL WATER QUALITY IMPACTS ON RELIABILITY

Local water supplies consist of groundwater and recycled water. Where recycled water is used for landscape irrigation and other non-potable applications. Currently there are no anticipated water quality reliability issues with recycled water. As presented in the Water Sources section of this Plan, the District has been conducting the Creek and Well Monitoring Program, together with the California Department of Health Services. The Creek and Well Monitoring Program consists of test events, each event requiring specific sampling and monitoring criteria for creek flow and well water. This data will be used for evaluating the need for additional treatment facilities at the wells and meeting the requirements for the Long Term 2 Enhanced Surface Water Treatment Rule. Any criterion for additional treatment is not expected to impact the use of groundwater as a reliable source of water. As summarized in Table 39, there are no current or projected water quality issues that will impact the reliability of the District's water sources.

Table 39 Current and Projected Water Supply Changes Due to Water Quality – Percentage						
Water Source	2005	2010	2015	2020	2025	2030
Groundwater	0	0	0	0	0	0
Recycled	0	0	0	0	0	0
Imported	0	0	0	0	0	0

Source: TCWD staff

CHAPTER 10. WATER SERVICE RELIABILITY

10.1 INTRODUCTION

Trabuco Canyon Water District has a variety of water sources for meeting its current and projected water demands. These sources consist of imported wholesale water supplies, local groundwater, and recycled water. The need to address the reliability of these sources is necessary in particular because of the uncertainty of water supplies due to hydrologic variations and historical periods of drought. This section assesses the reliability of the District's water service, the ability to reliably supply water to meet the District's demands, for the following scenarios: projected normal water years, a single dry year, and periods with multiple dry years.

Projected water supply and demand values will be presented for each scenario, followed by a comparison of supply and demand. This comparison will be used to evaluate the reliability of water service for each scenario. Also, each scenario shows the District's water supply as an imported water supply and local water supply. Because most of the District's water supply is imported wholesale water purchased through MWDOC, values and analyses provided by MWDOC will be presented. In addition, the values and results of analyses provided by MWDOC are also based on data, information, and values from MET, the wholesale water supplier to MWDOC.

The following section presents the methodology used by MWDOC in conducting its water service reliability, as adapted from MWDOC's Draft 2005 UWMP. Values and results for the reliability of local water supply will be based on the District's historical records for local groundwater and recycled water availability.

10.2 IMPORTED WATER SERVICE RELIABILITY BACKGROUND

The reliability of the District's water service was evaluated for projected normal water years, a single dry normal water year and multiple dry water years. The basis for the various scenarios was determined by MWDOC and was presented in this Plan under the section titled Water Supply. In summary, the various scenarios are based on the following:

- Normal water year: average of historical hydrology from 1922 to 2004
- Single dry normal water year: 1961 hydrology
- Multiple dry water years: 1959 to 1961 hydrology

As previously mentioned, the reliability of water service is based on evaluating the reliability of local and imported water supplies. Historical records were used to conservatively project local water supplies consisting of groundwater and recycled water. The reliability of imported water supplies was projected by MWDOC using a computerized model called "Water Balance Model", developed by MWDOC staff. This model is used to forecast local groundwater supplies from the Orange County

basin and the imported water demand. The model takes into account various factors including: weather, total retail demand by member agencies, recycled water supplies, surface water supplies, and groundwater supplies. Similar to the model used by MET, the Water Balance Model uses 83 years of historical hydrology (from 1922 to 2004) to project water supply and demand in Orange County over a 25 year planning horizon. The model's projections enable MWDOC to assess water service reliability and include provide values particular to the reliability of service for imported water supplied to Trabuco Canyon Water District. The values provided to Trabuco Canyon Water District are included in the tables below for imported water supply reliability.

MWDOC evaluated several sources of water including a resource mix for direct consumption and indirect consumption water demands. The resource mix for meeting direct consumption includes local groundwater, recycled water, surface water, and imported water from MET. The local supply for this resource mix is expected to increase through additional groundwater and recycled water sources, thereby reducing the dependence on imported water from MET, under normal climate conditions. The resource mix for indirect consumption includes local and imported supplies used for groundwater recharge and seawater intrusion barrier injection. Local supplies for indirect consumption are also expected to increase with the completion of the Groundwater Replenishment System in 2007/2008. In addition to evaluating local groundwater, surface water, and recycled water supplies, MWDOC also assessed MET's reliability for supplying imported water to MWDOC's member agencies.

The statements that follow were adapted from MWDOC's 2005 UWMP. When assessing the water supply reliability for the region, MWDOC used an inference approach to conclude that MET is capable of supplying imported water to meet the demand projected by MWDOC under various hydrologic conditions. In its Draft 2005 UWMP, MET presents its supply availability at the regional level, rather than at the member agency level. This approach does not enable MWDOC to quantify the availability of imported supply from MET specific to each agency. However, MET was able to demonstrate it can maintain 100% reliability in meeting direct consumptive demand under a normal hydrologic year, the single driest hydrologic year, and a series of multiple dry years. By inference, MWDOC determined the availability of its imported supply should equate to its projected imported demand. Thus, MWDOC concludes MET will meet all of the imported demand for direct consumption projected by MWDOC in its UWMP.

In summary, results of the analysis provided by MWDOC conclude that the region will have sufficient supplies to meet 100 % of its demand under every scenario during the next 25 years. Together with the District's projections for local supply, the total reliability of water service is projected to be met for the various scenarios evaluated. The following paragraphs describe the reliability of each water supply during a normal water year for the next 25 years, a single dry year period, and periods with multiple dry years.

10.3 NORMAL WATER YEAR

Supply and demand projections for normal water years are shown in Tables 40 and 41, respectively. Table 40 also includes the percent increase when compared to the normal water year. Table 41 shows a comparison of projected values to the current normal 2005 demand. Water supply values shown were previously determined in this Plan under the section titled Water Supply. Each table shows projections in 5 year increments for the next 25 years and the percent increase from the base year of 2005. Table 42 is a comparison of the difference between water supply and demand for a normal water year. As shown in Table 42, all local and imported water supplies are projected to meet the District's demands for the next 25 years. Details of each water supply are discussed below.

Local Water Supply

Local water supplies consist of groundwater and recycled water. Where recycled water is used for landscape irrigation and other non potable applications. Details of these sources were provided in the section titled Water Supply. Historically, the District's groundwater sources have produced between 25 AF/Y to over 1,000 AF/Y, with typical production averaging 400 ac-ft per year. However, during dry climate periods representative of single and multiple dry years, the District's historical data shows that approximate 250 AF/Y can be produced from local groundwater sources.

Recycled water continues to be an important source of local water for the District. Reclaimed water produced at the District's water reclamation plant is completely recycled within the District's service area. In addition, during peak demand periods, reclaimed water is supplemented with local urban runoff stored in Dove Lake, which has approximately 500 ac-ft of storage capacity. Dove Lake water is treated prior to supplementing reclaimed water supplies. Currently, 850 ac-ft per year of reclaimed water, including recycled water from Dove Lake, is completely reused within the District's service area. This value is projected to increase to 1,000 ac-ft per year by 2015. Beyond 2015, reclaimed water supplies are projected to stay level primarily because most of the projected population growth is expected to be outside of the water reclamation plant's service area. Areas of future growth include developments in the canyon that consist of dwelling units on septic systems. Other developments beyond 2015 also include areas outside of the water reclamation plant's service area. Both of these types of developments and growth are not expected to contribute significantly to recycled water supplies beyond 2015.

Table 40 Projected Normal Water Year Supply – AF/Y					
	2010	2015	2020	2025	2030
Supply	5,736	6,056	6,296	6,506	6,638
% of Normal Year*	127%	134%	139%	144%	147%

* Average of historical hydrologies from 1922 to 204, source: MWDOC.

Table 41 Projected Normal Water Year Demand -- AF/Y					
	2010	2015	2020	2025	2030
Demand	5,736	6,056	6,296	6,506	6,638
% of year 2005	127%	134%	139%	144%	147%

Table 42 Projected Normal Year Supply and Demand Comparison – AF/Y					
	2010	2015	2020	2025	2030
Supply totals	5,736	6,056	6,296	6,506	6,638
Demand totals	5,736	6,056	6,296	6,506	6,638
Difference (supply minus demand)	0	0	0	0	0
Difference as % of Supply	0%	0%	0%	0%	0%
Difference as % of Demand	0%	0%	0%	0%	0%

Imported Water Supply

Imported water supplies projected by MWDOC and provided to the District show that there will be sufficient water supplies available to meet the District's imported water demands through 2030, for a normal water year.

10.4 SINGLE DRY WATER YEAR

Local water supplies consist of groundwater and recycled water. During a single dry water year or periods of drought, the District's groundwater sources are expected to produce less water. To meet potable water demands, imported water supplies will be increased to the amount available and projected by MWDOC, see Table 43. In addition to increased imported water, the District can increase its use of stored recycled water from Dove Lake. In the past, the District supplemented the recycled water demands through Dove Lake and through the purchase of domestic water. With recent improvements at Dove Lake, the District is now capable of further managing and supplying the recycled reservoir, through an air gap connection, additional water to meet current and projected demands.

Reducing the amount of imported water for landscape irrigation and supplementing with Dove Lake recycled water further increases the reliability of water service during dry years. This production of recycled water for non-potable water demands is projected to be similar to a normal water year and fully reliable.

The water supply and demand for a single dry year event was evaluated for the periods from 2010 to 2030, in five year increments, as shown in Table 43 and 44. Table 43 shows that MWDOC's assessment includes supplying additional imported water to meet the anticipated higher than normal demands shown in Table 44, while local supplies remain constant and supplied in the manners previously described. Table 45 is a comparison of the difference between water supply and demand for each single dry year event. As shown in Table 45, local and imported water supplies are projected to meet the Districts' demands for the next 25 years.

Table 43 Projected Single Dry Year Water Year Supply -- AF/Y					
	2010	2015	2020	2025	2030
Local Supply	1,041	1,086	1,086	1,086	1,086
Imported Supply	5,030	5,323	5,576	5,798	5,937
Supply Totals	6,071	6,409	6,662	6,884	7,023
% of projected normal	106%	106%	106%	106%	106%

Table 44 Projected Single Dry Year Water Year Demand -- AF/Y					
	2010	2015	2020	2025	2030
Demand	6,071	6,409	6,662	6,884	7,023
% of projected normal	106%	106%	106%	106%	106%

Table 45 Projected Single Dry Year Supply and Demand Comparison -- AF/Y					
	2010	2015	2020	2025	2030
Supply totals	6,071	6,409	6,662	6,884	7,023
Demand totals	6,071	6,409	6,662	6,884	7,023
Difference	0	0	0	0	0
Difference as % of Supply	0.0%	0.0%	0.0%	0.0%	0.0%
Difference as % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%

10.5 MULTIPLE DRY WATER YEARS

The water supply and demand for multiple dry year events was evaluated for the periods from 2008 to 2030, in increments of three years. For each event, a projection of the water supply and demand is performed, followed by a comparison of these to determine periods that may be deficient or have excess water supply. The following is a list of the various multiple dry water year events evaluated and their corresponding tables:

<u>Multiple Dry Year Period</u>	<u>Table</u>	<u>Description</u>
2008 to 2010	46	Projected Supply
	47	Projected Demand
	48	Projected Supply and Demand Comparison
2013 to 2015	49	Projected Supply
	50	Projected Demand
	51	Projected Supply and Demand Comparison
2018 to 2020	52	Projected Supply
	53	Projected Demand
	54	Projected Supply and Demand Comparison
2023 to 2025	55	Projected Supply
	56	Projected Demand
	57	Projected Supply and Demand Comparison
2028 to 2030	58	Projected Supply
	59	Projected Demand
	60	Projected Supply and Demand Comparison

Local Water Supply

Similar to the single dry water year, local groundwater sources are expected to produce less groundwater, with increased recycled water use from Dove Lake. Imported water supplies will be increased to the amount available and projected by MWDOC. These projected imported water supplies vary in amounts each year and for each event evaluated, with some years requiring more local supplies than others. While most of the projected local supply is from recycled water, a source assumed to be fully reliable during multiple dry water years, the District will need to make up for additional water supplies without the availability of local groundwater. If necessary, to make up for the loss of local water supplies during multiple dry water years, the District can also treat surface water available for emergency use from Irvine Lake. Irvine Lake is a permitted source of water available to the District. As discussed in under the Water Sources section of this Plan, the District has the capability to obtain surface diversions from Irvine Lake (Santiago Reservoir) through the V. P. Baker Aqueduct for treatment at the Dimension Water Treatment Plant. Through various leases and arrangements which TCWD is part to, Irvine Lake water can be utilized to provide a limited amount of supply to the District. Together the increase in recycled water from Dove Lake supplemented by the use of treated water from Irvine Lake, the District will be able to meet its local water supply requirements during the multiple dry water years.

Imported Water Supply

Imported water supplies projected by MWDOC and provided to the District show that there will be sufficient water supplies available to meet the District's imported water demands through 2030, for a normal water year.

Summary

As shown in Tables 46 through 60, for multiple dry year periods, all local and imported water supplies are projected to meet the Districts demands for the next 25 years.

Table 46 Projected Supply During Multiple Dry Year Period Ending in 2010 -- AF/Y					
Supply			2008	2009	2010
Normal					
Local Supply			1,143	1,187	1,194
Imported Supply			4,165	4,375	4,542
Supply Totals			5,308	5,562	5,736
Multiple Dry Year					
Local Supply			956	1,091	1,041
Imported Supply			4,718	4,695	5,030
Supply Totals			5,674	5,786	6,071
% of projected normal			107%	104%	106%

Table 47 Projected Demand Multiple Dry Year Period Ending in 2010 -- AF/Y					
Demand			2008	2009	2010
Normal			5,308	5,562	5,736
Multiple Dry Year			5,674	5,786	6,071
% of projected normal			107%	104%	106%

Table 48 Projected Supply & Demand Comparison During Multiple Dry Year Period Ending in 2010 -- AF/Y					
			2008	2009	2010
Supply totals			5,674	5,786	6,071
Demand totals			5,674	5,786	6,071
Difference			0	0	0
Difference as % of Supply			0.0%	0.0%	0.0%
Difference as % of Demand			0.0%	0.0%	0.0%

Table 49 Projected Supply During Multiple Dry Year Period Ending in 2015 – AF/Y					
Supply			2013	2014	2015
Normal					
Local Supply			1,222	1,232	1,238
Imported Supply			4,711	4,767	4,818
Supply Totals			5,933	5,999	6,056
Multiple Dry Years					
Local Supply			1,037	1,137	1,086
Imported Supply			5,304	5,101	5,323
Supply Totals			6,341	6,238	6,409
% of projected normal			107%	104%	106%

Table 50 Projected Demand Multiple Dry Year Period Ending in 2015 – AF/Y					
Demand			2013	2014	2015
Normal			5,933	5,999	6,056
Multiple Dry Year			6,341	6,238	6,409
% of projected normal			107%	104%	106%

Table 51 Projected Supply & Demand Comparison During Multiple Dry Year Period Ending in 2015 – AF/Y					
			2013	2014	2015
Supply totals			6,341	6,238	6,409
Demand totals			6,341	6,238	6,409
Difference			0	0	0
Difference as % of Supply			0.0%	0.0%	0.0%
Difference as % of Demand			0.0%	0.0%	0.0%

Table 52 Projected Supply During Multiple Dry Year Period Ending in 2020 – AF/Y					
Supply			2018	2019	2020
Normal					
Local Supply			1,238	1,238	1,238
Imported Supply			4,964	5,012	5,058
Supply Totals			6,202	6,250	6,296
Multiple Dry Years					
Local Supply			1,051	1,141	1,086
Imported Supply			5,575	5,356	5,576
Supply Totals			6,626	6,497	6,662
% of projected normal			107%	104%	106%

Table 53 Projected Demand Multiple Dry Year Period Ending in 2020 – AF/Y					
Demand (Year 2020 Max Value Assumed)			2018	2019	2020
Normal			6,202	6,250	6,296
Multiple Dry Year			6,626	6,497	6,662
% of projected normal			107%	104%	106%

Table 54 Projected Supply & Demand Comparison During Multiple Dry Year Period Ending in 2020 – AF/Y					
			2018	2019	2020
Supply totals			6,626	6,497	6,662
Demand totals			6,626	6,497	6,662
Difference			0	0	0
Difference as % of Supply			0.0%	0.0%	0.0%
Difference as % of Demand			0.0%	0.0%	0.0%

Table 55 Projected Supply During Multiple Dry Year Period Ending in 2025 – AF/Y					
Supply			2023	2024	2025
Normal					
Local Supply			1,238	1,238	1,238
Imported Supply			5,189	5,232	5,268
Supply Totals			6,427	6,470	6,506
Multiple Dry Year					
Local Supply			1,051	1,141	1,086
Imported Supply			5,815	5,585	5,798
Supply Totals			6,866	6,725	6,884
% of projected normal			107%	104%	106%

Table 56 Projected Demand Multiple Dry Year Period Ending in 2025 – AF/Y					
Demand (Year 2025 Max Value Assumed)			2023	2024	2025
Normal			6,427	6,470	6,506
Multiple Dry Year			6,866	6,725	6,884
% of projected normal			107%	104%	106%

Table 57 Projected Supply & Demand Comparison During Multiple Dry Year Period Ending in 2025 – AF/Y					
			2023	2024	2025
Supply totals			6,866	6,725	6,884
Demand totals			6,866	6,725	6,884
Difference			0	0	0
Difference as % of Supply			0.0%	0.0%	0.0%
Difference as % of Demand			0.0%	0.0%	0.0%

Table 58 Projected Supply During Multiple Dry Year Period Ending in 2030 – AF/Y					
Supply			2028	2029	2030
Normal					
Local Supply			1,238	1,238	1,238
Imported Supply			5,357	5,387	5,400
Supply Totals			6,595	6,625	6,638
Multiple Dry Year					
Local Supply			1,051	1,141	1,086
Imported Supply			5,995	5,745	5,937
Supply Totals			7,046	6,886	7,023
% of projected normal			107%	104%	106%

Table 59 Projected Demand Multiple Dry Year Period Ending in 2030 – AF/Y					
Demand (Year 2030 Max Value Assumed)			2028	2029	2030
Normal			6,595	6,625	6,638
Multiple Dry Year			7,046	6,886	7,023
% of projected normal			107%	104%	106%

Table 60 Projected Supply & Demand Comparison During Multiple Dry Year Period Ending in 2030 – AF/Y					
			2028	2029	2030
Supply totals			7,046	6,886	7,023
Demand totals			7,046	6,886	7,023
Difference			0	0	0
Difference as % of Supply			0.0%	0.0%	0.0%
Difference as % of Demand			0.0%	0.0%	0.0%

REFERENCES

City of Rancho Santa Margarita General Plan EIR (Draft), June 2002

County of Orange, "Foothill/Trabuco Specific Plan", 1991

County of Orange, Resources & Development Management Department, Input on Land Use Planning Decisions for Trabuco Canyon Water District, September 14, 2005

Metropolitan Water District of Southern California draft 2005 Regional Urban Water Management Plan, May 2005

Municipal Water District of Orange County draft 2005 Urban Water Management Plan, August 2005

Smith Linda, County of Orange. *Personal Interview*, October 2005

Trabuco Canyon Water District Conservation Encouragement Rate Program, July and September 2005

Trabuco Canyon Water District, "Final Water, Wastewater and Reclaimed Water Master Plan", December 1999

Trabuco Canyon Water District, Ordinance No. 91, 14, adopted April 17, 1991

Trabuco Canyon Water District "Sub-Area Master Plan, Saddle Creek/Crest", July, 2004, PSOMAS

Trabuco Canyon Water District "Sub-Area Master Plan, Robinson Ridge", March, 2005, PSOMAS

Trabuco Canyon Water District "Sub-Area Master Plan, Saddleback Meadows", April 2005, PSOMAS

Trabuco Canyon Water District Urban Water Management Plan, December 2000

Trabuco Canyon Water District. "Water Shortage Contingency Plan", January 1992

Trabuco Canyon Water District "Water, Wastewater and Reclaimed Water System Analysis, Highland Estates," February 2005, PSOMAS

U. S. Bureau of Census, Census 2000

Appendix A
Resolution of Plan Adoption

RESOLUTION NO. 2005-1054

**RESOLUTION OF THE BOARD OF DIRECTORS
OF THE TRABUCO CANYON WATER DISTRICT
ADOPTING 2005 URBAN WATER MANAGEMENT PLAN UPDATE**

WHEREAS, the California Legislature enacted Assembly Bill 797 during the 1983-84 Regular Session of the California Legislature (Water Code Section 10610, et.seq., known as the Urban Water Management Planning Act,) and as amended subsequently, which mandates that every supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre feet of water annually, prepare an Urban Water Management Plan, the primary objective of which is to plan for the conservation and efficient use of water; and

WHEREAS, the Trabuco Canyon Water District is an urban supplier of water providing water to a population over 10,000; and

WHEREAS, Assembly Bill 797 requires that said Plan be periodically reviewed at least once every five years and that the urban water supplier shall make any amendments or changes to its Plan which are indicated by the review; and

WHEREAS, the Plan must be adopted by December 31, 2005, after public review and hearing, and filed with the California Department of Water Resources within thirty (30) days of adoption; and

WHEREAS, the Trabuco Canyon Water District has therefore, prepared and circulated for public review a draft Urban Water Management Plan, and a properly noticed public hearing regarding said Plan was held by the Board of Directors on November 16, 2005; and

WHEREAS, the Trabuco Canyon Water District did prepare and shall file said Plan with the California Department of Water Resources.


NOW, THEREFORE, the Board of Directors of Trabuco Canyon Water District DOES HEREBY RESOLVE, DETERMINE AND ORDER AS FOLLOWS:

Section 1. The 2005 Urban Water Management Plan Update attached hereto is adopted as the 2005 Urban Water Management Plan Update of the Trabuco Canyon Water District pursuant to Section 10610, et. seq. of the Water Code.

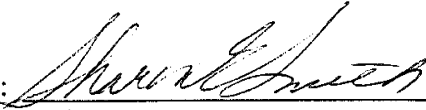
Section 2. The Secretary of the Trabuco Canyon Water District is directed to file copies of the 2005 Urban Water Management Plan Update with the Department of Water Resources of the State of California and the California State Library pursuant to Water Code Section 10644 within thirty (30) days after its adoption.

ADOPTED, SIGNED AND APPROVED this 21st day of December, 2005.

TRABUCO CANYON WATER DISTRICT

By: 

President/Vice-President


By: 

Secretary

STATE OF CALIFORNIA)
) ss.
COUNTY OF ORANGE)

I, Sharon E. Smith, Secretary of the Board of Directors of the Trabuco Canyon Water District, do hereby certify that the foregoing resolution was duly adopted by the Board of Directors at a meeting of said Board held on the 21st day of December, 2005, and that it was so adopted by the following vote:


AYES: Loskot, Acosta, Disston, Haselton, Safranski
NOES: None
ABSTAIN: None
ABSENT: None


Secretary of the Board of Directors
of the Trabuco Canyon Water District

STATE OF CALIFORNIA)
) ss.
COUNTY OF ORANGE)

I, Sharon E. Smith, Secretary of the Board of Directors of the Trabuco Canyon Water District, do hereby certify that the foregoing is a full, true and correct copy of Resolution No. 2005-1054 of said Board and that the same has not been amended or repealed.

Dated this 21st day of December, 2005


Secretary of the Board of Directors
of the Trabuco Canyon Water District

Appendix B
California's Groundwater Bulletin 118, dated 2004
Hydrologic Region South Coast
San Juan Valley Groundwater Basin

San Juan Valley Groundwater Basin

- Groundwater Basin Number: 9-01
- County: Orange
- Surface Area: 16,700 acres (26 square miles)

Basin Boundaries and Hydrology

This groundwater basin underlies the San Juan Valley and several tributary valleys in southern Orange County. The basin is bounded on the west by the Pacific Ocean and otherwise by Tertiary semi-permeable marine deposits. San Juan Creek drains the San Juan Valley and several other creeks drain valleys tributary to the San Juan. Average annual precipitation ranges from 11 to 15 inches.

Hydrogeologic Information

Water Bearing Formations

The primary water-bearing unit within the San Juan Valley Groundwater Basin is Quaternary alluvium (DWR 1972; 1988). This alluvium ranges from a heterogeneous mixture of sand, silt, and gravel in the eastern portion of the basin, to coarse sand near the center, to fine-grained lagoonal sediments in the western portion of the basin (DWR 1972). Thickness of the alluvium averages about 65 feet and may reach more than 125 feet (DWR 1972). Specific yield of the alluvium is estimated to average about 13 percent and range from 3 to 22 percent (DWR 1988). Wells typically yield from 450 to 1,000 gpm (CDM 1987). Sand layers of the Tertiary Santiago Formation may be water bearing within the region and beneath the basin (DWR 1972), and minor amounts of water are extracted from fractured basement rock beneath the basin (DWR 1988).

Restrictive Structures

At the confluence of San Juan Creek and Canada Chiquita, near the middle portion of the basin, the Cristianitos fault forms a barrier to subsurface outflow (DWR 1972; NBS Lowry 1994). Forester, Mission Viejo and Aliso faults are not known to form barriers to groundwater flow, but they are mapped as crossing the basin (DWR 1988).

Recharge Areas

Recharge of the basin is from flow in San Juan Creek, Oso Creek, and Arroyo Trabuco and precipitation to the valley floor. Water from springs flows directly from Hot Spring Canyon into San Juan Creek, adding to recharge (DWR 1972).

Groundwater Level Trends

Groundwater levels in 1987 were similar to water levels in 1952 (DWR 1988). Hydrographs show seasonal cycles with average declines related to drought cycles that recover during more plentiful seasons (DWR 1988). Groundwater flows southwest toward the Pacific Ocean (DWR 1988).

Groundwater Storage

Groundwater Storage Capacity. The total storage capacity has been estimated to be 90,000 af (DWR 1972; 1975; 1988) or 63,220 af (NBS/Lowry (1994).

Groundwater in Storage. Unknown.

Groundwater Budget (Type A)

A study by NBS Lowry (1994) investigated and modeled the groundwater basin for 1979 through 1990. They determined a mean pumpage of 5,621 af/year and a mean subsurface inflow of 2,246 af/year. Average subsurface outflow to the ocean is estimated to be about 450 af/yr (DWR 1972).

Groundwater Quality

Characterization. Groundwater mineral content is variable in this basin (DWR 1972; CDM 1987). Groundwater in the basin typically has calcium bicarbonate or bicarbonate-sulfate character below the upper reaches of the valleys, and calcium-sodium sulfate or sulfate-chloride near the coast (DWR 1988). In general, TDS content in groundwater increases from below 500 mg/L in the upper reaches of the valleys to near 2,000 mg/L near the coast (NBS Lowry 1994). TDS content of water from 3 public supply wells averages 760 mg/L and ranges from 430 mg/L to 1,250 mg/L.

Impairments. Groundwater in the western part of the basin has high TDS content, and water coming from springs in Thermal Canyon has high fluorine content (DWR 1972).

Water Quality in Public Supply Wells

Constituent Group ¹	Number of wells sampled ²	Number of wells with a concentration above an MCL ³
Inorganics – Primary	3	0
Radiological	3	0
Nitrates	3	0
Pesticides	3	1
VOCs and SVOCs	3	0
Inorganics – Secondary	3	3

¹ A description of each member in the constituent groups and a generalized discussion of the relevance of these groups are included in *California's Groundwater – Bulletin 118* by DWR (2003).

² Represents distinct number of wells sampled as required under DHS Title 22 program from 1994 through 2000.

³ Each well reported with a concentration above an MCL was confirmed with a second detection above an MCL. This information is intended as an indicator of the types of activities that cause contamination in a given basin. It represents the water quality at the sample location. It does not indicate the water quality delivered to the consumer. More detailed drinking water quality information can be obtained from the local water purveyor and its annual Consumer Confidence Report.

Well Characteristics

Well yields (gal/min)			
Municipal/Irrigation	Range: 450-1,000 gal/min (17 wells; CDM 1987)		Average:
Total depths (ft)			
Domestic	Range:		Average:
Municipal/Irrigation	Range: 200 - 250 ft (DWR 1967)	Average:	

Active Monitoring Data

Agency	Parameter	Number of wells /measurement frequency
Department of Health Services and cooperators	Title 22 water quality	8/annually

Basin Management

Groundwater management: The San Juan Basin Authority.

Water agencies

Public	San Juan Basin Authority, Moulton Niguel Water District, Capistrano Beach County Water District, Capistrano Valley County Water District, Orange County Waterworks District No. 4, Santa Margarita Water District, Santa Ana Mountains Water District, El Toro Water District
Private	

References Cited

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- California Department of Water Resources (DWR). 1967. *Ground Water Occurrence and Quality, San Diego Region*. Bulletin 106-2. 233 p.
- _____. 1972. *Planned Utilization of Water Resources in the San Juan Creek Basin Area*. Bulletin No. 104-7. 210 p.
- _____. 1975. *California's Ground Water*. Bulletin 118. 135 p.
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- Camp Dresser and McKee, Inc. (CDM). 1987. *Task 10- Groundwater Management Plan*.
- NBS/Lowry Engineers and Planners. 1994. *San Juan Basin Groundwater Management and Facility Plan*. Facility Plan.

Additional References

- Rogers, Thomas H. 1973. *Geologic Map of California, Santa Ana Sheet*. California Division of Mines and Geology. Olaf P. Jenkins Edition. Scale 1:250,000. 1 sheet.
- Moulton Niguel Water District. 2000. *2000 Water Quality Report*. 6 p.

Errata

Substantive changes made to the basin description will be noted here.

Appendix C
Ordinance 91-14, Adopted April, 1991

ORDINANCE NO. 91-14

ORDINANCE OF THE BOARD OF DIRECTORS
OF THE TRABUCO CANYON WATER DISTRICT
ADOPTING A MANDATORY WATER CONSERVATION PLAN

WHEREAS, the Trabuco Canyon Water District ("TCWD") is a county water district organized and operating pursuant to Section 30000 et seq., of the Water Code of the State of California; and

WHEREAS, the State of California is experiencing its fifth consecutive drought year, and imported water supplies for the State Water Project from Northern California and the Colorado River are dramatically less than normal; and

WHEREAS, the Governor of California has directed all communities within the state to adopt rationing plans and has directed the Department of Water Resources to monitor water use; and

WHEREAS, on March 12, 1991 Metropolitan Water District of Southern California ("MWD") adopted Resolution 8312 urging all public agencies and all water supply retailers within MWD's service area to adopt and enforce as rapidly as possible a mandatory water conservation plan, including ordinances, regulations and orders, limiting their own water use and that of their customers to no more than 80 percent of normal usage;

WHEREAS, no public agency or water supply retailer shall be eligible to apply for participation in MWD's Local Projects Program or Conservation Credit Program, and no entity that currently participates in those programs shall benefit from any increased MWD contributions unless it adopts a mandatory water conservation program and otherwise makes a good faith effort to comply with the provisions of this resolution as determined by MWD; and

WHEREAS, Municipal Water District of Orange County ("MWDOC") adopted Resolution No. 1433 on April 3, 1991 declaring the existence of a water shortage emergency prohibiting the waste of water and implementing measures to preserve and allocate available water supplies; and

WHEREAS, pursuant to Section 31026 of the Water Code, TCWD has the power to restrict the use of District water during any emergency caused by drought, or other threatened or existing water shortage, and to prohibit the wastage of District water or the use of District water during such

periods, for any purpose other than household uses or such other restricted uses as may be determined to be necessary by the District and may prohibit use of such water during such periods for specific uses which the District may from time to time find to be nonessential; and

WHEREAS, pursuant to Water Code Sections 30000 et seq., and 375 - 377, inclusive, TCWD may establish additional guidelines, surcharges, cost recovery systems, enforcement procedures and other rules and regulations to assist in the conservation of water;

WHEREAS, the Board of Directors of TCWD, based on the aforementioned actions mandated by the Governor of California, MWD and MWDOC and a review of the factual circumstances, has determined the necessity of adopting a mandatory water conservation plan to reduce overall District usage to meet mandated levels.

NOW THEREFORE, THE BOARD OF DIRECTORS OF THE TRABUCO CANYON WATER DISTRICT, UNDER THE AUTHORITY OF WATER CODE SECTIONS 30000 ET SEQ., AND 375 - 377, INCLUSIVE, DOES HEREBY DETERMINE AND ORDAIN AS FOLLOWS:

Section 1. FINDINGS - DECLARATION OF A WATER SHORTAGE EMERGENCY.

- (A) Agencies supplying water to TCWD may have mandated water rationing to the District because of limited supplies; and
- (B) Distribution or storage facilities of agencies supplying water to TCWD may become inadequate to meet demands; and
- (C) A major failure of the supply, storage and distribution facilities of any agency supplying water to TCWD may occur.

Section 2. APPLICATION. The provisions of this Ordinance shall apply to all water customers, water users and property served by TCWD.

Section 3. AUTHORIZATION. The General Manager or designated representatives are hereby authorized or directed to implement the provisions of this Ordinance as provided for herein.

Section 4. CONSERVATION PHASE IMPLEMENTATION. The Board of Directors shall determine the extent of the conservation required through the implementation and/or termination of particular conservation phases in order for TCWD to prudently plan for the demand for water by

its customers. Thereafter, the General Manager may order that the appropriate phase of water conservation be implemented or terminated in accordance with the applicable provision of this Ordinance. The implementation of any phase beyond Phase I shall be affected by notifying District customers in a manner prescribed by the General Manager. The phase designated shall become effective immediately upon announcement. The declaration of any phase beyond Phase I shall be reported to the Board of Directors at its next Regular Board Meeting. The Board of Directors shall thereupon ratify the declaration, rescind the declaration, or direct the declaration of a different phase.

Section 5. ENFORCEMENT. The procedures shall be as set forth in Exhibit A attached.

Section 6. RELIEF FROM COMPLIANCE. The procedures shall be as set forth in Exhibit B attached.

Section 7. CONSERVATION RATES, FEES AND SURCHARGES. The General Manager shall recommend the conservation rates, fees and surcharges. The rates, fees and surcharges will be reviewed by, and adopted by, action of the Board of Directors.

Section 8. CEQA EXEMPTION. The Board of Directors finds that this Ordinance and actions taken hereafter pursuant to this Ordinance are exempt from the California Environmental Quality Act as specific actions necessary to prevent or mitigate an emergency pursuant to 14 California Code of Regulations, Sections 15269, 15273, 15274 and 15321, and the applicable statutes of the Public Resources Code.

Section 9. EFFECTIVE DATE. This Ordinance shall become effective as of the date of adoption and shall be published within ten days of adoption, pursuant to California Water Code Section 376.

Section 10. PHASES OF THE MANDATORY WATER CONSERVATION PLAN. The following are the phases of the Mandatory Water Conservation Plan:

- (A) PHASE I. COMPLIANCE--WITH CONSERVATION RATES
Phase I applies immediately as the probability exists that TCWD will not be able to meet all of water demands of its customers. During Phase I, the following water conservation measures shall apply except when reclaimed water is used:

1. Water shall not be used to wash down sidewalks, driveways, parking areas, tennis courts, patios or other paved areas, except to alleviate immediate fire or sanitation hazards.
2. Customers shall adjust all sprinklers and irrigation systems to avoid overspray, run-off and waste.
3. Non-commercial irrigation customers shall be restricted to watering greenbelt areas and existing slopes to two days per week during non-peak hours, 8:00 p.m. to 6:00 a.m.
4. The use of water from fire hydrants shall be limited to fire fighting and related activities, or other activities necessary to maintain the health, safety and welfare of the public.
5. Washing of autos, trucks, trailers, boats and other types of mobile equipment shall be done with a hand-held bucket or a hand-held hose equipped with a positive shut-off nozzle for quick rinses.
6. Water shall not be used to wash down concrete areas in developing projects. All concrete areas must be broomed.
7. Restaurants shall not serve water to their customers except when specifically requested.
8. A moratorium is hereby established on slope planting. TCWD shall not issue meters or provide water for any new slopes until further notice.
9. Decorative fountains shall be shut off unless a water recycling system is used.
10. Customers shall check faucets, toilets and pipes (both indoor and outdoor) for leaks, and repair immediately.
11. Agricultural water usage shall be restricted to 70% of the individual agricultural water user's average for the base year as established in Section 10.A.12.

12. The General Manager shall establish a two-tiered billing structure based on area consumption ranges by meter size. The base year for calculating the averages used in the rate structure shall be the calendar year as specified by the TCWD Board of Directors. Averages shall be based on a non-peak season (January-June) and a peak season (July-December). A surcharge per billing unit (one ccf) will be assessed for usage above the average for each billing type. The surcharge shall be based on the penalty charged by MWD for agencies exceeding pre-determined water allocations.

(B) PHASE II. COMPLIANCE--WITH ENFORCEMENT PROCEDURES, AND COST RECOVERY FEE. Phase II applies when TCWD will not be able to meet all of the water demands of its customers. During Phase II, the following water conservation measures shall apply except when reclaimed water is used:

1. Phase II includes all items of Phase I, plus:

- a. All customers shall cut back water consumption by 20% of the pre-established consumption ranges as established in Section 10.A.12.
- b. Agricultural water usage shall be restricted to 50% of the individual agricultural water user's average for the base year as established in Section 10.A.12.
- c. Use of any water for any construction purpose shall be pre-approved by the General Manager.
- d. Customers found to be in violation of Section 10.A.1 through 11, inclusive shall be: 1) issued a violation warning to comply; 2) issued a second violation warning to comply; 3) charged a fee to recover costs incurred as set forth in Exhibit A attached; and 4) Service of water shall be discontinued or appropriately limited as set forth in Exhibit A.

(C) PHASE III. COMPLIANCE--WATER EMERGENCY. Phase III applies when MWD so mandates or when a major failure of any supply or distribution facilities occurs in the water distribution system

of any agency supplying water to TCWD. During Phase III, the following water conservation measures shall apply except when reclaimed water is used:

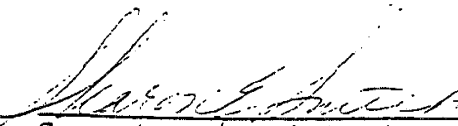
1. Phase III includes all items of Phases I and II, plus:
 - a. All customers shall cut back water consumption by 50% of the pre-established consumption ranges as established in Section 10.A.12.
 - b. Agricultural water usage shall be restricted to 10% of the individual agricultural water user's average for the base year as established in Section 10.A.12.
 - c. Use of water for any construction purpose is prohibited.
 - d. Section 10.B.1.d. shall apply.

Section 11. The Secretary or Assistant Secretary of TCWD shall cause a copy of this Ordinance to be published in accordance with the provisions of Water Code Section 376 and 30000 et seq.

PASSED AND APPROVED at the Regular Meeting of the Board of Directors held on the 17th day of April , 1991.

TRABUCO CANYON WATER DISTRICT

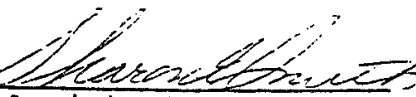
By: 
President/Vice President

By: 
Secretary/Assistant Secretary

STATE OF CALIFORNIA)
) ss.
COUNTY OF ORANGE)

I, Sharon E. Smith, Assistant Secretary of the Board of Directors of the Trabuco Canyon Water District, do hereby certify that the foregoing Ordinance was adopted by the Board of Directors of said District at the Regular Meeting of said Board held on the 17th day of April, 1991 and that it was so adopted by the following vote:

AYES:	Members: Bauer, Storm, Wall, Baker, Williams
NOES:	Members: None
ABSTAIN:	Members: None
ABSENT:	Members: None

By 
Assistant Secretary

STATE OF CALIFORNIA)
) ss.
COUNTY OF ORANGE)

I, Sharon E. Smith, Assistant Secretary of the Board of Directors of the Trabuco Canyon Water District, do hereby certify that the above and foregoing is a full, true and correct copy of Ordinance No. 91-14 of said Board, and that the same has not been amended or repealed.

DATED: April 17, 1991

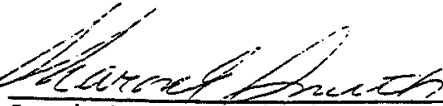
By 
Assistant Secretary of the
Trabuco Canyon Water District

EXHIBIT A
ENFORCEMENT PROCEDURES

1. EMPLOYEE EDUCATION:

- a. All personnel shall be made knowledgeable of the conditions set forth in Ordinance No. 91-14 and the applicable Phase of conservation in effect.

2. VIOLATION WARNING TO COMPLY:

- a. When the General Manager, Water Superintendent, field personnel or any other designated employee is made aware of water waste, either through any source of communication or through visual inspection, the employee shall provide documentation to the General Manager.
- b. Such documentation may include, but is not limited to, an investigation report and photographs.
- c. A violation warning to comply, signed by the General Manager, shall be forwarded to the customer.

3. SECOND VIOLATION WARNING TO COMPLY:

- a. The General Manager shall use a standardized form of Violation Notice for the second and succeeding warnings which the General Manager shall prescribe from time to time based on the conservation phase in effect.
- b. On a second offense, a Violation Notice stating the specific water waste practice(s) shall be hand delivered to an individual over the age of eighteen at the residence or place of business. Or, the Violation Notice shall be posted on the front entrance door of the residence or place of business.
- c. The Violation Notice shall state that a water violation surcharge, based on labor costs to deliver all notices, staff time to investigate the water waste practice(s), and administrative fees, shall be included on the customer's succeeding utility billing should the water waste practice(s) continue.

4. VIOLATION SURCHARGE:

- a. On the third offense, a water violation surcharge will be included on the customer's utility billing.

5. DISCONTINUATION OF WATER SERVICE:

- a. On the fourth offense, service of water shall be discontinued for a forty-eight (48) hour period. Such forty-eight (48) hour period shall commence twenty-four (24) hours after a notice to such effect has been hand delivered to an individual over the age of eighteen at the residence or place of business. Or, the discontinuation notice shall be posted on the front entrance door of the residence or place of business.
- b. A labor surcharge to shut off and turn on the meter shall be paid by the customer prior to restoration.

EXHIBIT B

RELIEF FROM COMPLIANCE

Variances to the standards set within the Mandatory Water Conservation Plan may be granted by the General Manager if it is found and determined that:

1. The applicant has submitted a written request based on a water bill which exceeds the standard.
2. The applicant shall have the responsibility to provide proof that the applicant has been following water conservation procedures.
3. Failure to grant such a variance would cause unnecessary hardship on the applicant or the general public such as loss of production or loss of employment.
4. Failure to grant such a variance would cause an emergency condition affecting the health, sanitation, fire protection or safety of the applicant or the public.

The variance shall be a reasonable volume of water based on the need of the applicant with approval by the General Manager.

Appendix D

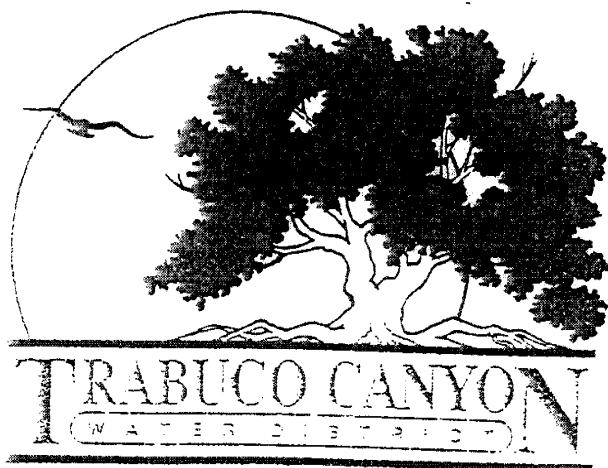
Water Shortage Contingency Plan

WATER SHORTAGE CONTINGENCY PLAN

For the

Trabuco Canyon Water District
30575 Trabuco Canyon Road, Suite 200
P.O. Box 500
Trabuco Canyon, CA 92678

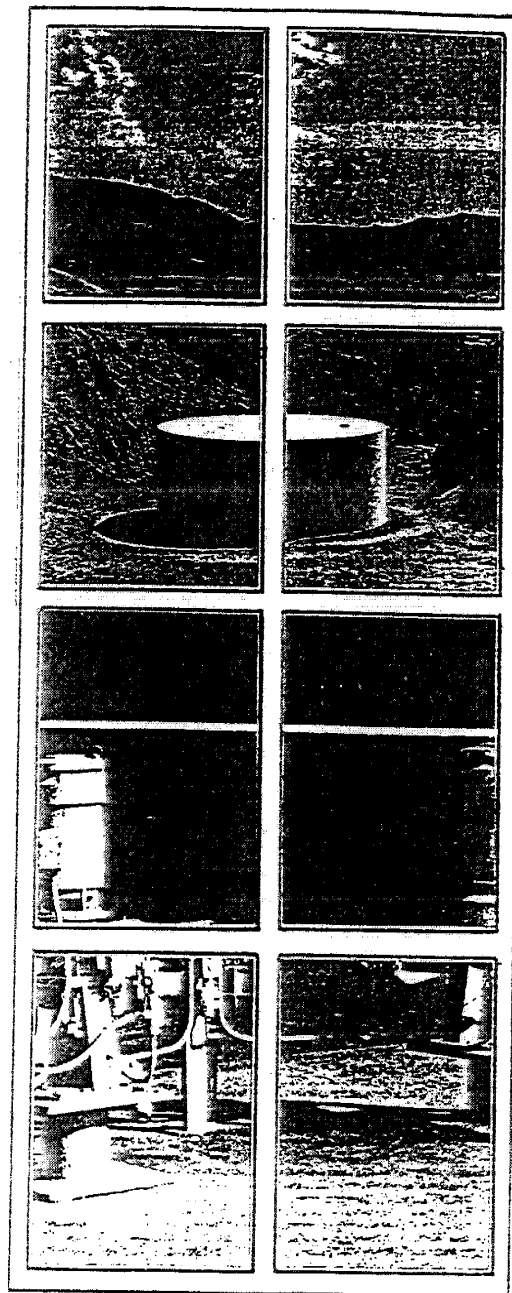
Agency Contact Person:
Sharon E. Smith
Assistant to the General Manager
Bus: (714) 858-0277
Fax: (714) 858-3025



Prepared By

NBS
LOWRY

Irvine Regional Office



ENGINEERS & PLANNERS

January 1992

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**WATER SHORTAGE CONTINGENCY PLAN
TRABUCO CANYON WATER DISTRICT
JANUARY 1992**

OVERVIEW

This is a plan by which the Trabuco Canyon Water District (TCWD) foresees being able to provide water to its customers, on an equitable and business-sound basis, in the event, during the next 36 months, water supplies to the District are curtailed by as much as 50%. While this Plan was prepared specifically in response to the requirements of California Assembly Bill No. 11, as approved by the Governor of California on October 13, 1991, it is an extension of the TCWD's ongoing efforts to conservatively manage its water resources. The Plan will, therefore, undergo changes, as resources, information, and opportunities evolve.

The Trabuco Canyon Water District's water conservation efforts are in the two-fold areas of reducing normal operational losses and facilitating the reduction in end-user demand. The conservation plan presented here provides measures to accomplish both. While the State mandate of planning for a 50% cut in water supplies may require dramatic steps to achieve the last measure of needed conservation, the emphasis here is first on making long-term loss and demand improvements that will benefit the overall community.

The body of the Plan is presented below, in the order in which the Plan requirements are given in Assembly Bill No. 11.

Coordination with Other Urban Water Suppliers and Public Agencies

In coordination with Metropolitan Water District of Southern California (MWD) Trabuco Canyon Water District is currently implementing water conservation measures consistent with MWD's Stage 5 Incremental Interruption and Conservation Plan. See TCWD Ordinance No. 91-14 for details (Attachment A).

TCWD also coordinates its water management activities with neighboring urban water suppliers, which include: Los Alisos Water District, Santa Margarita Water District, Santiago County Water District, El Toro Water District, and the Irvine Ranch Water District. TCWD has water connections with all these water districts and is also participating in the construction of the Regional South County Pipeline Project. The latter will provide a new water supply connection for TCWD, thus improving operational water management. Also, TCWD recently became a member of the San Juan Basin Authority and is actively participating in that joint powers agency's efforts to provide up to 10,000 acre-feet of long-term emergency storage in the San Juan Creek Groundwater Basin.

Estimate of Past, Current, and Projected Water Use

As detailed in TCWD's "Urban Water Management Plan Update, December 1990", TCWD has a maximum day demand of 8.7 cfs projected for the District (Page 15, Management Plan). This relates to the past, current, and future estimated water uses shown below on Table 1.

TABLE 1

ESTIMATED WATER USAGE (ACRE-FT PER FISCAL YEAR)

	1984- 1985 ⁽¹⁾	1989- 1990 ⁽¹⁾	1990- 1991 ⁽²⁾	1991- 1992 ⁽³⁾	1992- 1993 ⁽³⁾	1993- 1994 ⁽³⁾	1994- 1995 ⁽⁴⁾
Residential	259	1,411	2,030	2,250	2,261	2,272	2,513
Commercial	10	21	25	30	30	30	55
Industrial	44	44	44	44	44	44	44
Governmental	119	119	119	119	119	119	119
Agricultural	302	360	360	345	345	345	345
Construction Water	31	223	250	100	200	92	92
Landscape Irrigation	0	619	900	850	820	850	885
IRWD & ETWD ⁽³⁾	0	239	239	240	452	0	0
System Losses	87	300	419	448	478	470	352
TOTAL SYSTEM DEMAND	852	3,336	4,186	4,476	4,779	4,169	4,405

(1) From Urban Water Management Plan Update, Figure C

(2) Current Records

(3) Water transported through TCWD's system and delivered to the Irvine Ranch and El Toro Water District.

(4) Based on forecast of water needs provided to MWD

Estimate of Worst Case Minimum Water Supply (12, 24, & 36 Month)

TABLE 2

PROJECTED WORST CASE WATER SUPPLY (ACRE-FT PER FISCAL YEAR)

Source	Contractual Amount		Actual Deliveries 1990-91	Projected Worst Case Supply		
	CFS	Ac-Ft		12 Mon.	24 Mon	36 Mon
Santiago Aqueduct	6.0	(2)	2021	1394	1011	1011
AMP and South County Pipeline ⁽¹⁾	4.0	(2)	1139	786	570	570
TCWD Wells ⁽²⁾	1.1	----	225	0	0	0
Reclaimed Water	----	----	800	740	720	700
TOTALS	12.1	(2)	4185	2920	2300	2280
% Supply Shortage	----	----	0	39%	45%	48%

- (1) Allen McCulloch Pipeline Water and South County Pipeline Water are supplied to the TCWD from the same source and under the same contract.
- (2) The wells are seasonal and dependent upon rain fall. In the event of future drought conditions, their planned supply is estimated at zero.

Stages of Action, Mandatory Provisions, Limits, Penalties/Charges

The Trabuco Canyon Water District has a three stage plan to meet up to a 50% reduction in water supply. The phases of the "Mandatory Water Conservation Plan" are summarized as shown on Table 3. The details of each phase's mandatory conservation actions are covered in Ordinance No. 91-14, adopted by the TCWD Board on April 17, 1991. (Attachment A). Included in Ordinance No. 91-14 are Consumptive Limits for the most restrictive stages (Phases II & III), and Penalties and Charges for excessive use.

TABLE 3

STAGES OF ACTION AND REDUCTION GOALS (MANDATORY)

Stage/Phase	Reduction	Action Description
I	---	Compliance with Conservation Rates
II	up to 20%	Compliance with Enforcement Procedures, and Cost Recovery Fee
III	up to 50%	Compliance with Water Emergency

Analysis of Revenue and Expenditure Impacts

The Trabuco Canyon Water District is currently operating in Phase I of the above water supply reduction. Estimated Net Incomes for each of these phases is shown on Table 4. Fixed expenses for Conservation Phases II and III include the expense of additional personnel (temporary) to help monitor and enforce mandatory conservation measures. Anticipated shortfalls in projected net incomes, due to water supply shortages, would need to be covered through increased water rates.

TABLE 4

REVENUE/EXPENDITURE IMPACT OF REDUCTION PHASES (\$000'S/YEAR)

Supply/Reduction Phase	I ⁽¹⁾	II	III
% Water Reduction	----	20%	50%
Revenue (Fixed)	302,114	302,114	302,114
Revenue (Variable)	1,786,885	1,429,508	893,443
Subtotal Revenue	2,088,999	1,731,622	1,195,557
Expenses (Fixed) ⁽²⁾	1,031,312	1,081,312	1,131,312
Expenses (Variable) ⁽³⁾	984,550	787,640	492,275
Subtotal Expenses	2,015,862	1,868,952	1,623,587
Net Income	(73,137)	(137,330)	(428,030)
% Change Needed in Variable Revenue	4%	10%	48%

(1) 1991 calendar year. TCWD is in Phase I during this time.

(2) Includes 50% of TCWD administrative costs. The other 50% is allocated to wastewater operations.

(3) Energy and water purchases

Draft Water Shortage Contingency Resolution

TCWD adopted this Water Shortage Contingency Plan on January 15, 1992, (See Attachment B).

Mechanism for Determining Actual Reduction in Water Use

Water consumption figures are currently compiled monthly. As detailed on Page 10 of the TCWD "Urban Water Management Plan Update, December 1990", TCWD is pursuing the possibility of expanding its meter reading to include remote readings via telephone lines. This will provide more timely water use information to compare actual reductions with planned reductions.

Method of Evaluating Plan Effectiveness

In the cases of Reduction Phases II and III, the Trabuco Canyon Water District will compare actual receipts and deliveries of water in the District with required reductions first on a quarterly basis or, if necessary, monthly.

Steps Necessary to Implement Plan

The Resolution 92-674 implements this Plan (see Attachment B). The Trabuco Canyon Water District will pursue the potential operational loss reduction and demand reduction steps listed in Attachment C.

Trabuco Canyon Water District WATER SYSTEM DESCRIPTION

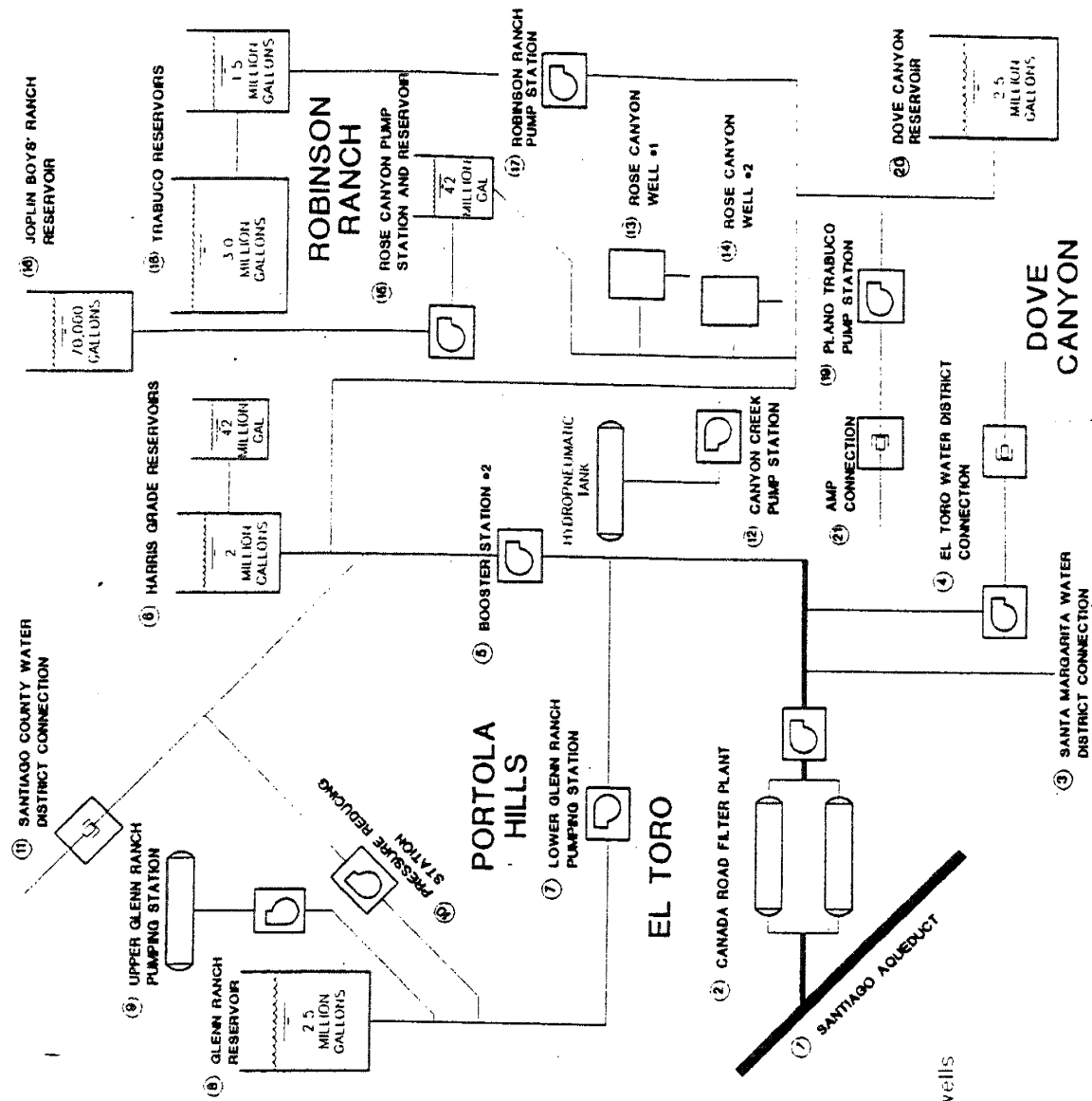


FIGURE 1

19. Plano Trabuco Pump Station - Booster pumps push water to the Harris Grade and Dove Canyon Reservoirs
20. Dove Canyon Reservoir - This reservoir provides water storage for Dove Canyon.
21. Allen McColloch Connection - Water from the State Water Project enters TCWD's system via the South County Pipeline

1. Santiago Aqueduct - Water from Santiago Aqueduct (Colorado River) enters TCWD's system through Los Alisos Water District Connection.
2. Canada Road Filter Plant - Water travels in pipeline one-half mile to Canada Road Filter Plant. Water is filtered through sand, chlorinated and monitored for turbidity level.
3. Santa Margarita Water District Connection - This is a backup system for sharing water with a neighboring water district in an emergency.
4. El Toro Water District Connection - This is a backup system for sharing water with a neighboring water district in an emergency.
5. Booster Station # 2 - Booster pumps push the water uphill to Harris Grade Reservoirs.
6. Harris Grade Reservoirs - These reservoirs provide water storage for the Trabuco Canyon community.
7. Lower Glenn Ranch Pump Station - Booster pumps push the water uphill to Glenn Ranch Reservoir.
8. Glenn Ranch Reservoir - This reservoir provides water storage for Portola Hills.
9. Upper Glenn Ranch Pump Station - Water is pumped to the higher levels of Portola Hills.
10. Pressure Reducing Station - This station reduces water pressure to proper levels for Glenn Ranch.
11. Santiago County Water District Connection - This is a backup system for sharing water with a neighboring water district in an emergency.
12. Canyon Creek Pump Station - Booster pumps push the water uphill to a hydro-pneumatic tank which supplies Canyon Creek residents.
13. & 14. Rose Canyon Well #1 & #2 - Water from these wells is blended with imported water four months of the year
15. Rose Canyon Pump Station and Reservoir - Water is pumped from the reservoir uphill to Joplin Boys' Ranch Reservoir.
16. Joplin Boys' Ranch Reservoir - This reservoir serves Joplin Boys' Ranch.
17. Robinson Ranch Pump Station - These pumps push water uphill to the Triabuco Reservoirs
18. Triabuco Reservoirs - These two reservoirs provide water storage for Robinson Ranch.

APPENDIX A

ORDINANCE NO. 91-14

ORDINANCE OF THE BOARD OF DIRECTORS OF THE TRABUCO CANYON WATER DISTRICT ADOPTING A MANDATORY WATER CONSERVATION PLAN

WHEREAS, the Trabuco Canyon Water District ("TCWD") is a county water district organized and operating pursuant to Section 30000 et seq., of the Water Code of the State of California; and

WHEREAS, the State of California is experiencing its fifth consecutive drought year, and imported water supplies for the State Water Project from Northern California and the Colorado River are dramatically less than normal; and

WHEREAS, the Governor of California has directed all communities within the state to adopt rationing plans and has directed the Department of Water Resources to monitor water use; and

WHEREAS, on March 12, 1991 Metropolitan Water District of Southern California ("MWD") adopted Resolution 8312 urging all public agencies and all water supply retailers within MWD's service area to adopt and enforce as rapidly as possible a mandatory water conservation plan, including ordinances, regulations and orders, limiting their own water use and that of their customers to no more than 80 percent of normal usage;

WHEREAS, no public agency or water supply retailer shall be eligible to apply for participation in MWD's Local Projects Program or Conservation Credit Program, and no entity that currently participates in those programs shall benefit from any increased MWD contributions unless it adopts a mandatory water conservation program and otherwise makes a good faith effort to comply with the provisions of this resolution as determined by MWD; and

WHEREAS, Municipal Water District of Orange County ("MWDOC") adopted Resolution No. 1433 on April 3, 1991 declaring the existence of a water shortage emergency prohibiting the waste of water and implementing measures to preserve and allocate available water supplies; and

WHEREAS, pursuant to Section 31026 of the Water Code, TCWD has the power to restrict the use of District water during any emergency caused by drought, or other threatened or existing water shortage, and to prohibit the wastage of District water or the use of District water during such

periods, for any purpose other than household uses or such other restricted uses as may be determined to be necessary by the District and may prohibit use of such water during such periods for specific uses which the District may from time to time find to be nonessential; and

WHEREAS, pursuant to Water Code Sections 30000 et seq., and 375 - 377, inclusive, TCWD may establish additional guidelines, surcharges, cost recovery systems, enforcement procedures and other rules and regulations to assist in the conservation of water;

WHEREAS, the Board of Directors of TCWD, based on the aforementioned actions mandated by the Governor of California, MWD and MWDOC and a review of the factual circumstances, has determined the necessity of adopting a mandatory water conservation plan to reduce overall District usage to meet mandated levels.

NOW THEREFORE, THE BOARD OF DIRECTORS OF THE TRABUCO CANYON WATER DISTRICT, UNDER THE AUTHORITY OF WATER CODE SECTIONS 30000 ET SEQ., AND 375 - 377, INCLUSIVE, DOES HEREBY DETERMINE AND ORDAIN AS FOLLOWS:

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- (A) Agencies supplying water to TCWD may have mandated water rationing to the District because of limited supplies; and
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- (C) A major failure of the supply, storage and distribution facilities of any agency supplying water to TCWD may occur.

Section 2. APPLICATION. The provisions of this Ordinance shall apply to all water customers, water users and property served by TCWD.

Section 3. AUTHORIZATION. The General Manager or designated representatives are hereby authorized or directed to implement the provisions of this Ordinance as provided for herein.

Section 4. CONSERVATION PHASE IMPLEMENTATION. The Board of Directors shall determine the extent of the conservation required through the implementation and/or termination of particular conservation phases in order for TCWD to prudently plan for the demand for water by

its customers. Thereafter, the General Manager may order that the appropriate phase of water conservation be implemented or terminated in accordance with the applicable provision of this Ordinance. The implementation of any phase beyond Phase I shall be affected by notifying District customers in a manner prescribed by the General Manager. The phase designated shall become effective immediately upon announcement. The declaration of any phase beyond Phase I shall be reported to the Board of Directors at its next Regular Board Meeting. The Board of Directors shall thereupon ratify the declaration, rescind the declaration, or direct the declaration of a different phase.

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- (A) PHASE I. COMPLIANCE--WITH CONSERVATION RATES
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2. Customers shall adjust all sprinklers and irrigation systems to avoid overspray, run-off and waste.
3. Non-commercial irrigation customers shall be restricted to watering greenbelt areas and existing slopes to two days per week during non-peak hours, 8:00 p.m. to 6:00 a.m.
4. The use of water from fire hydrants shall be limited to fire fighting and related activities, or other activities necessary to maintain the health, safety and welfare of the public.
5. Washing of autos, trucks, trailers, boats and other types of mobile equipment shall be done with a hand-held bucket or a hand-held hose equipped with a positive shut-off nozzle for quick rinses.
6. Water shall not be used to wash down concrete areas in developing projects. All concrete areas must be broomed.
7. Restaurants shall not serve water to their customers except when specifically requested.
8. A moratorium is hereby established on slope planting. TCWD shall not issue meters or provide water for any new slopes until further notice.
9. Decorative fountains shall be shut off unless a water recycling system is used.
10. Customers shall check faucets, toilets and pipes (both indoor and outdoor) for leaks, and repair immediately.
11. Agricultural water usage shall be restricted to 70% of the individual agricultural water user's average for the base year as established in Section 10.A.12.

12. The General Manager shall establish a two-tiered billing structure based on area consumption ranges by meter size. The base year for calculating the averages used in the rate structure shall be the calendar year as specified by the TCWD Board of Directors. Averages shall be based on a non-peak season (January-June) and a peak season (July-December). A surcharge per billing unit (one ccf) will be assessed for usage above the average for each billing type. The surcharge shall be based on the penalty charged by MWD for agencies exceeding pre-determined water allocations.

(B) PHASE II. COMPLIANCE--WITH ENFORCEMENT PROCEDURES, AND COST RECOVERY FEE. Phase II applies when TCWD will not be able to meet all of the water demands of its customers. During Phase II, the following water conservation measures shall apply except when reclaimed water is used:

1. Phase II includes all items of Phase I, plus:

- a. All customers shall cut back water consumption by 20% of the pre-established consumption ranges as established in Section 10.A.12.
- b. Agricultural water usage shall be restricted to 50% of the individual agricultural water user's average for the base year as established in Section 10.A.12.
- c. Use of any water for any construction purpose shall be pre-approved by the General Manager.
- d. Customers found to be in violation of Section 10.A.1 through 11, inclusive shall be: 1) issued a violation warning to comply; 2) issued a second violation warning to comply; 3) charged a fee to recover costs incurred as set forth in Exhibit A attached; and 4) Service of water shall be discontinued or appropriately limited as set forth in Exhibit A.

(C) PHASE III. COMPLIANCE--WATER EMERGENCY. Phase III applies when MWD so mandates or when a major failure of any supply or distribution facilities occurs in the water distribution system

of any agency supplying water to TCWD. During Phase III, the following water conservation measures shall apply except when reclaimed water is used:

1. Phase III includes all items of Phases I and II, plus:

- a. All customers shall cut back water consumption by 50% of the pre-established consumption ranges as established in Section 10.A.12.
- b. Agricultural water usage shall be restricted to 10% of the individual agricultural water user's average for the base year as established in Section 10.A.12.
- c. Use of water for any construction purpose is prohibited.
- d. Section 10.B.1.d. shall apply.

Section 11. The Secretary or Assistant Secretary of TCWD shall cause a copy of this Ordinance to be published in accordance with the provisions of Water Code Section 376 and 30000 et seq.

PASSED AND APPROVED at the Regular Meeting of the Board of Directors held on the _____ day of _____, 1991.

TRABUCO CANYON WATER DISTRICT

By: _____

President/Vice President

By: _____

Secretary/Assistant Secretary

STATE OF CALIFORNIA)
) ss.
COUNTY OF ORANGE)

I, Sharon E. Smith, Assistant Secretary of the Board of Directors of the Trabuco Canyon Water District, do hereby certify that the foregoing Ordinance was adopted by the Board of Directors of said District at the Regular Meeting of said Board held on the 17th day of April, 1991 and that it was so adopted by the following vote:

AYES:	Members:
NOES:	Members:
ABSTAIN:	Members:
ABSENT:	Members:

By _____
Assistant Secretary

STATE OF CALIFORNIA)
) ss.
COUNTY OF ORANGE)

I, Sharon E. Smith, Assistant Secretary of the Board of Directors of the Trabuco Canyon Water District, do hereby certify that the above and foregoing is a full, true and correct copy of Ordinance No. 91-14 of said Board, and that the same has not been amended or repealed.

DATED: April 17, 1991

By _____
Assistant Secretary of the
Trabuco Canyon Water District

EXHIBIT A
ENFORCEMENT PROCEDURES

1. EMPLOYEE EDUCATION:

- a. All personnel shall be made knowledgeable of the conditions set forth in Ordinance No. 91-14 and the applicable Phase of conservation in effect.

2. VIOLATION WARNING TO COMPLY:

- a. When the General Manager, Water Superintendent, field personnel or any other designated employee is made aware of water waste, either through any source of communication or through visual inspection, the employee shall provide documentation to the General Manager.
- b. Such documentation may include, but is not limited to, an investigation report and photographs.
- c. A violation warning to comply, signed by the General Manager, shall be forwarded to the customer.

3. SECOND VIOLATION WARNING TO COMPLY:

- a. The General Manager shall use a standardized form of Violation Notice for the second and succeeding warnings which the General Manager shall prescribe from time to time based on the conservation phase in effect.
- b. On a second offense, a Violation Notice stating the specific water waste practice(s) shall be hand delivered to an individual over the age of eighteen at the residence or place of business. Or, the Violation Notice shall be posted on the front entrance door of the residence or place of business.
- c. The Violation Notice shall state that a water violation surcharge, based on labor costs to deliver all notices, staff time to investigate the water waste practice(s), and administrative fees, shall be included on the customer's succeeding utility billing should the water waste practice(s) continue.

4. VIOLATION SURCHARGE:

- a. On the third offense, a water violation surcharge will be included on the customer's utility billing.

5. DISCONTINUATION OF WATER SERVICE:

- a. On the fourth offense, service of water shall be discontinued for a forty-eight (48) hour period. Such forty-eight (48) hour period shall commence twenty-four (24) hours after a notice to such effect has been hand delivered to an individual over the age of eighteen at the residence or place of business. Or, the discontinuation notice shall be posted on the front entrance door of the residence or place of business.
- b. A labor surcharge to shut off and turn on the meter shall be paid by the customer prior to restoration.

EXHIBIT B

RELIEF FROM COMPLIANCE

Variances to the standards set within the Mandatory Water Conservation Plan may be granted by the General Manager if it is found and determined that:

1. The applicant has submitted a written request based on a water bill which exceeds the standard.
2. The applicant shall have the responsibility to provide proof that the applicant has been following water conservation procedures.
3. Failure to grant such a variance would cause unnecessary hardship on the applicant or the general public such as loss of production or loss of employment.
4. Failure to grant such a variance would cause an emergency condition affecting the health, sanitation, fire protection or safety of the applicant or the public.

The variance shall be a reasonable volume of water based on the need of the applicant with approval by the General Manager.

APPENDIX B

DRAFT

RESOLUTION NO. 92-674

RESOLUTION OF THE BOARD OF DIRECTORS
OF THE TRABUCO CANYON WATER DISTRICT
ADOPTING A WATER SHORTAGE CONTINGENCY PLAN

WHEREAS, the California Legislature enacted Assembly Bill 11x during the 1991 Extraordinary Session of the California Legislature (an act to amend California Water Code Sections 10620, 10621, 10631, and 10652, and to add Section 10656 to the California Water Code, relating to water); and

WHEREAS, AB11X mandates that every urban water supplier, providing municipal water directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, to develop a Water Shortage Contingency Plan; and

WHEREAS, AB11x mandates that said Plan be filed with the California Department of Water Resources by January 31, 1992; and

WHEREAS, the Trabuco Canyon Water District is an urban supplier of water providing water to more than 3,000 customers, and has therefore, prepared and circulated for public review a Draft Water Shortage Contingency Plan and a properly noticed public hearing regarding said Draft Water Shortage Contingency Plan was held by the Board of Directors on January 15, 1992, and a Final Water Shortage Contingency Plan prepared.

NOW, THEREFORE, THE BOARD OF DIRECTORS OF TRABUCO CANYON WATER DISTRICT DOES HEREBY RESOLVE, DETERMINE AND ORDER AS FOLLOWS:

Section 1: The Water Shortage Contingency Plan attached hereto as Exhibit A is adopted as the Water Shortage Contingency Plan of Trabuco Canyon Water District pursuant to Sections 10610, et. seq. of the Water Code.

Section 2: The Secretary of the Trabuco Canyon Water District is directed to file three (3) copies of the Water Shortage Contingency Plan with the Department of Water Resources of the State of California within thirty (30) days after its adoption and prior to January 31, 1992.

Section 3: The General Manager is hereby authorized to declare a Water Shortage Emergency and implement this Water Shortage Contingency Plan.

Section 4: The General Manager shall recommend to the Board of Directors regarding additional procedures, rules and regulations to carry out effective and equitable allocation of water resources during a water shortage.

ADOPTED, SIGNED AND APPROVED this _____ day of January, 1992.

TRABUCO CANYON WATER DISTRICT

By: _____
President/Vice President

By: _____
Secretary/Assistant Secretary

APPENDIX C

CONSERVATION ACTIONS TO REDUCE OPERATIONAL LOSSES AND USER DEMANDS

The following measures are being pursued by the Trabuco Canyon Water District, to reduce normal operational Losses and end-user Demands for water. In pursuing conservation measures, the TCWD's priority is "people first, then plants".

Measures to Reduce Losses

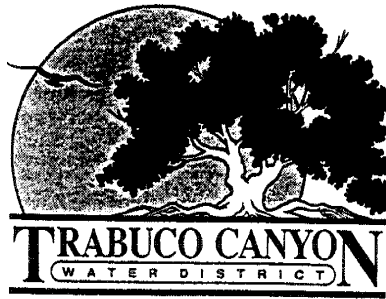
- Continue to upgrade custody-transfer meters
- Continue to increase meter accuracy with meter provings and maintenance
- Continue to upgrade cathodic protection, as a preventative measure against pipeline leaks
- Leak detection program and pipeline rehabilitation

Measures to Reduce End-User Demands

- Increase reclaimed water production
- Encourage and facilitate end-users switching irrigation to reclaimed water
- Recommend irrigation scheduling, based on weather monitoring
- Encourage local nurseries, landscapers, and architects to educate their client base about xeroscape landscaping
- Participation in local School District water education programs
- Encourage the use of treated sludge as a soil amendment for major new developer landscaping projects, to reduce initial 12-month water needs for new landscaping
- Encourage customer use of TCWD expertise, in conducting internal water audits
- See Ordinance 91-14 for penalties and charges for excess customer water usage.

STAFF MEMBERS

J. Fred Sims, General Manager
Bowie, Arneson, Kadi & Dixon
Legal Counsel
NBS/Lowry Inc.
District Engineer
A.R. Smith, Treasurer



BOARD OF DIRECTORS

Gunther M. Bauer, President
Craig J. Baker, Vice President
Charles R. Wall, Director
Samuel S. Porter, Director
Ted N. Storm, Director

DRAFT

January 20, 1992

Mr. Jonás Minton, Chief
Water Conservation Office
Department of Water Resources
1416 Ninth Street, Room 804
Sacramento, CA 92814

Subject: **TRABUCO CANYON WATER DISTRICT
WATER SHORTAGE CONTINGENCY PLAN**

Dear Mr. Minton:

Enclosed are three copies of the Trabuco Canyon Water District's (TCWD) **Water Shortage Contingency Plan**. The TCWD Board adopted this plan on January 15, 1992, by Resolution 92-674, a copy of which is included in the Plan as Appendix B.

The Plan was prepared under the direction of Sharon E. Smith, Assistant to the General Manager for the TCWD, with assistance of the TCWD's District Engineering firm, NBS/Lowry. Please feel free to contact Ms. Smith at 714/858-0277 (FAX 714/838-3025) on any matters concerning this Plan.

Yours truly,

J. Fred Sims
General Manager

JFS/RDP/mc

Enclosures

Appendix E
California Urban Water Conservation Council
Best Management Practices
2003 and 2004

Reported as of 10/5/05

Water Supply & Reuse

Reporting Unit:

Trabuco Canyon Water District

Year:

2003

Water Supply Source Information

Supply Source Name	Quantity (AF) Supplied	Supply Type
Santiago Aqueduct Commission	2231	Imported
Santa Margarita Water District	263	Imported
Irvine Ranch Water District	200	Imported
Santiago County Water District	74	Imported
TCWD Wells	528	Groundwater
TCWD Recycled Water	852	Recycled

Total AF: 4148

Reported as of 10/5/05

Accounts & Water Use

Reporting Unit Name: **Trabuco Canyon Water District**
Submitted to **CUWCC**
Year: **2003**
11/17/2004

A. Service Area Population Information:

1. Total service area population 12905

B. Number of Accounts and Water Deliveries (AF)

Type	Metered		Unmetered	
	No. of Accounts	Water Deliveries (AF)	No. of Accounts	Water Deliveries (AF)
1. Single-Family	3751	2140.78	0	0
2. Multi-Family	31	30.34	0	0
3. Commercial	66	0	0	0
4. Industrial	0	0	0	0
5. Institutional	0	0	0	0
6. Dedicated Irrigation	93	732.99	0	0
7. Recycled Water	20	745.72	0	0
8. Other	31	20.22	0	0
9. Unaccounted	NA	0	NA	0
Total	3992	3670.05	0	0

Metered Unmetered

Reported as of 10/5/05

10/5/200

BMP Form Status:	Year:
100% Complete	2003

BMP Form Status:
100% Complete

1. Based on your signed MOU date, 08/21/1991, your Agency STRATEGY DUE DATE is:

2. Has your agency developed and implemented a targeting/ marketing strategy for SINGLE-FAMILY residential water use surveys?

3. Has your agency developed and implemented a targeting/marketing strategy for MULTIFAMILY residential water use surveys?

a. If YES, when was it implemented?

Single Family Accounts	Multi-Family Units
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
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87	87
88	88
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90	90
91	91
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93	93
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95	95
96	96
97	97
98	98
99	99
100	100

00

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3. Check for leaks, including toilets, faucets and meter checks

no

no

5. Check irrigation system and timers

no

no

9. Measure total irrigable area (Recommended but not required for surveys)

no

no
10. Which measurement method is typically used (Recommended but not required for surveys)

None
11. Were customers provided with information packets that included evaluation results and water savings recommendations?

no

no
12. Have the number of surveys offered and completed, survey results, and survey costs been tracked?

no

no
- a. If yes, in what form are surveys tracked?
- b. Describe how your agency tracks this information.

C. Water Survey Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?

No
- a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

None

Reported as of 10/5/05

BMP 02: Residential Plumbing Retrofit

Reporting Unit: **Trabuco Canyon Water District** BMP Form Status: **100% Complete** Year: **2003**

A. Implementation

1. Is there an enforceable ordinance in effect in your service area requiring replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts? no

a. If YES, list local jurisdictions in your service area and code or ordinance in each:

- 2. Has your agency satisfied the 75% saturation requirement for single-family housing units? yes
- 3. Estimated percent of single-family households with low-flow showerheads: 91.7%
- 4. Has your agency satisfied the 75% saturation requirement for multi-family housing units? yes
- 5. Estimated percent of multi-family households with low-flow showerheads: 79.9%
- 6. If YES to 2 OR 4 above, please describe how saturation was determined, including the dates and results of any survey research.

In 2000, MWDOC and MET conducted the OC Saturation Survey and found countywide low flow showerhead saturation rates of 66.9% in single family and 59.8% in multifamily dwelling units. Saturation rates provided above represent linear extrapolations of saturation survey results for 02-03 and 03-04.

B. Low-Flow Device Distribution Information

- 1. Has your agency developed a targeting/ marketing strategy for distributing low-flow devices? no
 - a. If YES, when did your agency begin implementing this strategy?
 - b. Describe your targeting/ marketing strategy.

Low-Flow Devices Distributed/ Installed	SF Accounts	MF Units
2. Number of low-flow showerheads distributed:	0	0
3. Number of toilet-displacement devices distributed:	0	0
4. Number of toilet flappers distributed:	0	0
5. Number of faucet aerators distributed:	0	0

6. Does your agency track the distribution and cost of low-flow devices? no
- a. If YES, in what format are low-flow devices tracked?
- b. If yes, describe your tracking and distribution system :

C. Low-Flow Device Distribution Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No
- a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

None

Reported as of 10/5/05

BMP 03: System Water Audits, Leak Detection and Repair

Reporting Unit: **Trabuco Canyon Water District** BMP Form Status: **100% Complete** Year: **2003**

A. Implementation

- 1. Has your agency completed a pre-screening system audit for this reporting year? yes
- 2. If YES, enter the values (AF/Year) used to calculate verifiable use as a percent of total production:
 - a. Determine metered sales (AF) 2735
 - b. Determine other system verifiable uses (AF) 78
 - c. Determine total supply into the system (AF) 2869
 - d. Using the numbers above, if (Metered Sales + Other Verifiable Uses) / Total Supply is < 0.9 then a full-scale system audit is required. 0.98
- 3. Does your agency keep necessary data on file to verify the values used to calculate verifiable uses as a percent of total production? yes
- 4. Did your agency complete a full-scale audit during this report year? no
- 5. Does your agency maintain in-house records of audit results or the completed AWWA audit worksheets for the completed audit? yes
- 6. Does your agency operate a system leak detection program?
 - a. If yes, describe the leak detection program: yes

Meters starting with highest users by zone, compare actual use against purchases, taking into account reservoir levels, etc.

B. Survey Data

- 1. Total number of miles of distribution system line. 56
- 2. Number of miles of distribution system line surveyed. 20

C. System Audit / Leak Detection Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	10000	10000
2. Actual Expenditures	5500	-

D. "At Least As Effective As"

- 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? yes

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

TCWD has a meter replacement program. Meters measuring 3" to 10" have been tested, repaired, or replaced as necessary.

E. Comments

None

Reported as of 10/5/05

BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing

Reporting Unit:
Trabuco Canyon Water District

BMP Form Status:
100% Complete

Year:
2003

A. Implementation

- | | yes | no |
|---|-----|----|
| 1. Does your agency require meters for all new connections and bill by volume-of-use? | | |
| 2. Does your agency have a program for retrofitting existing unmetered connections and bill by volume-of-use? | | |
| a. If YES, when was the plan to retrofit and bill by volume-of-use existing unmetered connections completed? | | |
| b. Describe the program: | | |
| 3. Number of previously unmetered accounts fitted with meters during report year. | | 0 |

B. Feasibility Study

1. Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters?
 - a. If YES, when was the feasibility study conducted? (mm/dd/yy)
 - b. Describe the feasibility study:
2. Number of CII accounts with mixed-use meters.
3. Number of CII accounts with mixed-use meters retrofitted with

C. Meter Retrofit Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?
- a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

All accounts are metered and there are no mixed use accounts.

E. Comments

None

Reported as of 10/5/05

BMP 05: Large Landscape Conservation Programs and Incentives

Reporting Unit: **Trabuco Canyon Water District** BMP Form Status: **100% Complete** Year: **2003**

A. Water Use Budgets

1. Number of Dedicated Irrigation Meter Accounts:	7
2. Number of Dedicated Irrigation Meter Accounts with Water Budgets:	7
3. Budgeted Use for Irrigation Meter Accounts with Water Budgets (AF):	1400
4. Actual Use for Irrigation Meter Accounts with Water Budgets (AF):	1243
5. Does your agency provide water use notices to accounts with budgets each billing cycle?	yes

B. Landscape Surveys

1. Has your agency developed a marketing / targeting strategy for landscape surveys?	yes
a. If YES, when did your agency begin implementing this strategy?	04/01/1996
b. Description of marketing / targeting strategy:	

Offered, no one took advantage of offer.

2. Number of Surveys Offered.	0
3. Number of Surveys Completed.	0

4. Indicate which of the following Landscape Elements are part of your survey:

a. Irrigation System Check	no
b. Distribution Uniformity Analysis	no
c. Review / Develop Irrigation Schedules	no
d. Measure Landscape Area	no
e. Measure Total Irrigable Area	no
f. Provide Customer Report / Information	no

5. Do you track survey offers and results?

	no
--	----

6. Does your agency provide follow-up surveys for previously completed surveys?

	no
--	----

 a. If YES, describe below:

C. Other BMP 5 Actions

1. An agency can provide mixed-use accounts with ETo-based landscape budgets in lieu of a large landscape survey program.

no

Does your agency provide mixed-use accounts with landscape budgets?

0

2. Number of CII mixed-use accounts with landscape budgets.

yes

3. Do you offer landscape irrigation training?

no

4. Does your agency offer financial incentives to improve landscape water use efficiency?

Type of Financial Incentive:	Budget (Dollars/Year)	Number Awarded to Customers	Total Amount Awarded
a. Rebates	0	0	0
b. Loans	0	0	0
c. Grants	0	0	0

5. Do you provide landscape water use efficiency information to new customers and customers changing services?

yes

a. If YES, describe below:

Landscape water usage is provided at least bi-monthly in monthly newsletter. Brochures are distributed to new accounts with water efficiency

6. Do you have irrigated landscaping at your facilities?

no

a. If yes, is it water-efficient?

b. If yes, does it have dedicated irrigation metering?

7. Do you provide customer notices at the start of the irrigation season?

yes

8. Do you provide customer notices at the end of the irrigation season?

yes

D. Landscape Conservation Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	2000	2000
2. Actual Expenditures	1500	

E. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as"

No

variant of this BMP?

- a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

F. Comments

THE METERS LISTED ABOVE ARE UNDER BUDGET AS PART OF MUNICIPAL WATER DISTRICT OF ORANGE COUNTY'S LANDSCAPE CERTIFICATION PROGRAM. THIS HAS BEEN A TWO-YEAR EFFORT COVERING 2003 & 2004. ALL DATA IS LISTED IN REPORTING YEAR 2002. INCLUDED IN THIS PROGRAM IS AN INFORMAL SURVEY PROCESS. SINCE IT IS INFORMAL, UNDER B ABOVE, #2 & #3 ARE LISTED AS ZERO, WHILE THE COMPONENTS OF THE INFORMAL PROCESS ARE MARKED AS YES IN #4.

Reported as of 10/5/05

BMP 06: High-Efficiency Washing Machine Rebate Programs

Reporting Unit: **Trabuco Canyon Water District** BMP Form Status: **100% Complete** Year: **2003**

A. Implementation

1. Do any energy service providers or waste water utilities in your service area offer rebates for high-efficiency washers? yes
- a. If YES, describe the offerings and incentives as well as who the energy/waste water utility provider is.

Southern Calif. Edison, Pacific Gas & Electric and San Diego Gas & Electric.

2. Does your agency offer rebates for high-efficiency washers? no
3. What is the level of the rebate? 100
4. Number of rebates awarded. 63

B. Rebate Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	500	500
2. Actual Expenditures	375	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no
- a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

None

Reported as of 10/5/05

BMP 07: Public Information Programs

Reporting Unit: **Trabuco Canyon Water District** BMP Form Status: **100% Complete** Year: **2003**

A. Implementation

1. Does your agency maintain an active public information program to promote and educate customers about water conservation? yes
- a. If YES, describe the program and how it's organized.

Monthly Newsletter to customer base, water and wastewater plant tours, open house and brochure distribution.

2. Indicate which and how many of the following activities are included in your public information program.

Public Information Program Activity	Yes/No	Number of Events
a. Paid Advertising	no	
b. Public Service Announcement	yes	3
c. Bill Inserts / Newsletters / Brochures	yes	12
d. Bill showing water usage in comparison to previous year's usage	no	
e. Demonstration Gardens	no	
f. Special Events, Media Events	yes	3
g. Speaker's Bureau	no	
h. Program to coordinate with other government agencies, industry and public interest groups and media	yes	

B. Conservation Information Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	20000	10000
2. Actual Expenditures	17882	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? yes
- a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

None

Reported as of 10/5/05

BMP 08: School Education Programs

Reporting Unit: **Trabuco Canyon Water District** BMP Form Status: **100% Complete** Year: **2003**

A. Implementation

- 1. Has your agency implemented a school information program to promote water conservation? yes
- 2. Please provide information on your school programs (by grade level):

Grade	Are grade-appropriate materials distributed?	No. of class presentations	No. of students reached	No. of teachers' workshops
-------	--	----------------------------	-------------------------	----------------------------

Grades K-3rd	yes	5	76	0
Grades 4th-6th	yes	5	64	0
Grades 7th-8th	no	0	0	0
High School	no	0	0	0
3. Did your Agency's materials meet state education framework requirements?				yes

4. When did your Agency begin implementing this program? 01/01/1989

B. School Education Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

- 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Implemented through MWDOC

Reported as of 10/5/05

BMP 09: Conservation Programs for CII Accounts

Reporting Unit: **Trabuco Canyon Water District** BMP Form Status: **100% Complete** Year: **2003**

A. Implementation

- | | |
|--|-----|
| 1. Has your agency identified and ranked COMMERCIAL customers according to use? | yes |
| 2. Has your agency identified and ranked INDUSTRIAL customers according to use? | no |
| 3. Has your agency identified and ranked INSTITUTIONAL customers according to use? | no |

Option A: CII Water Use Survey and Customer Incentives Program

4. Is your agency operating a CII water use survey and customer incentives program for the purpose of complying with BMP 9 under this option? no

CII Surveys	Commercial Accounts	Industrial Accounts	Institutional Accounts
a. Number of New Surveys Offered	0	0	0
b. Number of New Surveys Completed	0	0	0
c. Number of Site Follow-ups of Previous Surveys (within 1 yr)	0	0	0
d. Number of Phone Follow-ups of Previous Surveys (within 1 yr)	0	0	0

CII Survey Components	Commercial Accounts	Industrial Accounts	Institutional Accounts
e. Site Visit	no	no	no
f. Evaluation of all water-using apparatus and processes	no	no	no
g. Customer report identifying recommended efficiency measures,	no	no	no

paybacks and agency incentives

Agency CII Customer Incentives	Budget (\$/Year)	No. Awarded to Customers	Total \$ Amount Awarded
h. Rebates	0	0	0
i. Loans	0	0	0
j. Grants	0	0	0
k. Others	0	0	0

Option B: CII Conservation Program Targets

5. Does your agency track CII program interventions and water savings for the purpose of complying with BMP 9 under this option?	yes
6. Does your agency document and maintain records on how savings were realized and the method of calculation for estimated savings?	yes
7. Estimated annual savings (AF/yr) from site-verified actions taken by agency since 1991.	0
8. Estimated annual savings (AF/yr) from non-site-verified actions taken by agency since 1991.	0

B. Conservation Program Expenditures for CII Accounts

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No
a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."	

D. Comments

TCWD PARTICIPATES IN A REGIONAL WHOLESALER (METROPOLITAN WATER DISTRICT OF S.C.) REBATE PROGRAM. WE HAVE PUT IN THE NUMBER OF REBATES BUT NOT THE DOLLAR AMOUNTS OR ACRE/FEET ASSOCIATED WITH THEM. METROPOLITAN TRACKS THESE

Reported as of 10/5/05

BMP 09a: CII ULFT Water Savings

Reporting Unit: **Trabuco Canyon Water District** BMP Form Status: **100% Complete** Year: **2003**

1. Did your agency implement a CII ULFT replacement program in the reporting year?
If No, please explain why on Line B. 10. Yes

A. Targeting and Marketing

1. What basis does your agency use to target customers for participation in this program?
Check all that apply. Service area zones
CII Sector or subsector

- a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

SEE MWDSC PROGRAM DESCRIPTION FOR DETAILS.

2. How does your agency advertise this program? Check all that apply. Newsletter

- a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

Newsletter

B. Implementation

1. Does your agency keep and maintain customer participant information? (Read the Help information for a complete list of all the information for this BMP.) Yes
2. Would your agency be willing to share this information if the CUWCC did a study to evaluate the program on behalf of your agency? Yes
3. What is the total number of customer accounts participating in the program during the last year? 1

CII Subsector	Number of Toilets Replaced			
	Standard Gravity Tank	Air Assisted	Valve Floor Mount	Valve Wall Mount
4.				
a. Offices	0	0	0	0
b. Retail / Wholesale	0	0	0	0

c. Hotels	0	0	0	0
d. Health	0	0	0	0
e. Industrial	0	0	0	0
f. Schools: K to 12	0	0	0	0
g. Eating	0	0	0	0
h. Govern- ment	0	0	0	0
i. Churches	0	0	0	0
j. Other	0	0	0	0

5. Program design.

6. Does your agency use outside services to implement this program? Rebate or voucher
No

a. If yes, check all that apply.

7. Participant tracking and follow-up.

No follow-up

8. Based on your program experience, please rank on a scale of 1 to 5, with 1 being the least frequent cause and 5 being the most frequent cause, the following reasons why customers refused to participate in the program.

- | | |
|-------------------------------------|---|
| a. Disruption to business | 1 |
| b. Inadequate paycheck | 1 |
| c. Inadequate ULFT performance | 1 |
| d. Lack of funding | 1 |
| e. American's with Disabilities Act | 1 |
| f. Permitting | 1 |
| g. Other. Please describe in B. 9. | 1 |

9. Please describe general program acceptance/resistance by customers, obstacles to implementation, and other issues affecting program implementation or effectiveness.

SEE MWDSC PROGRAM DESCRIPTION

10. Please provide a general assessment of the program for this reporting year. Did your program achieve its objectives? Were your targeting and marketing approaches effective? Were program costs in line with expectations and budgeting?

SEE MWDSC PROGRAM DESCRIPTION

C. Conservation Program Expenditures for CII ULFT

1. CII ULFT Program: Annual Budget & Expenditure Data

	Budgeted	Actual Expenditure
a. Labor	0	0
b. Materials	0	0
c. Marketing & Advertising	0	0
d. Administration & Overhead	0	0
e. Outside Services	0	0
f. Total	0	0

2. CII ULFT Program: Annual Cost Sharing

a. Wholesale agency contribution	0
b. State agency contribution	0
c. Federal agency contribution	0
d. Other contribution	0
e. Total	0

D. Comments

Reported as of 10/5/05

BMP 11: Conservation Pricing

Reporting Unit: **Trabuco Canyon Water District**
BMP Form **Year:**
Status: **2003**
100% Complete

A. Implementation

Rate Structure Data Volumetric Rates for Water Service by Customer Class

1. Residential

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	\$1746452
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$711064

2. Commercial

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	\$116886
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

3. Industrial

a. Water Rate Structure	Service Not Provided
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

4. Institutional / Government

a. Water Rate Structure	Service Not Provided
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

5. Irrigation

- a. Water Rate Structure Uniform
- b. Sewer Rate Structure Uniform
- c. Total Revenue from Volumetric Rates \$741489
- d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue \$0

6. Other

- a. Water Rate Structure Service Not Provided
- b. Sewer Rate Structure Service Not Provided
- c. Total Revenue from Volumetric Rates \$0
- d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue \$0

B. Conservation Pricing Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

- 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

None

Reported as of 10/5/05

BMP 12: Conservation Coordinator

Reporting Unit:
Trabuco Canyon Water District

BMP Form Status:
100% Complete

Year:
2003

A. Implementation

- 1. Does your Agency have a conservation coordinator? **yes**
- 2. Is this a full-time position? **no**
- 3. If no, is the coordinator supplied by another agency with which you cooperate in a regional conservation program? **yes**

4. Partner agency's name: **MUNICIPAL WATER DISTRICT OF ORANGE COUNTY**

5. If your agency supplies the conservation coordinator:

- a. What percent is this conservation coordinator's position? **5%**
- b. Coordinator's Name **Sharon E. Smith**
- c. Coordinator's Title **District Services Supervisor**
- d. Coordinator's Experience and Number of Years **17**
- e. Date Coordinator's position was created (mm/dd/yyyy) **07/01/1990**

6. Number of conservation staff, including Conservation Coordinator. **1**

B. Conservation Staff Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

- 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? **yes**

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

MWDOC HAS AN EXTREMELY ACTIVE CONSERVATION STAFF THAT IS AT THE DISPOSAL OF TCWD. THE AGENCIES HAVE WORKED CLOSE TOGETHER TO DETERMINE FEASIBILITY AND

COST EFFECTIVENESS OF IMPLEMENTING VARIOUS BMP
CONSERVATION PROGRAMS. THE MAJORITY OF CONSERVATION
REALTED BROCHURES ARE RECEIVED THROUGH MWDOC OR
MWDC

D. Comments

None

Reported as of 10/5/05

BMP 13: Water Waste Prohibition

Reporting Unit: **Trabuco Canyon Water District** BMP Form Status: **100% Complete** Year: **2003**

A. Requirements for Documenting BMP Implementation

1. Is a water waste prohibition ordinance in effect in your service area? **yes**

a. If YES, describe the ordinance:

- ORDINANCE NO 91-14 MANDATORY WATER CONSERVATION PLAN 3 STAGE PLAN TO MEET UP TO 50% REDUCTION CONSUMPTIVE LIMITS & PENALTIES FOR EXCESSIVE USE.
2. Is a copy of the most current ordinance(s) on file with CUWCC? **yes**
- a. List local jurisdictions in your service area in the first text box and water waste ordinance citations in each jurisdiction in the second text box:

None None

B. Implementation

1. Indicate which of the water uses listed below are prohibited by your agency or service area.
- a. Gutter flooding **yes**
 - b. Single-pass cooling systems for new connections **no**
 - c. Non-recirculating systems in all new conveyor or car wash systems **no**
 - d. Non-recirculating systems in all new commercial laundry systems **no**
 - e. Non-recirculating systems in all new decorative fountains **yes**
 - f. Other, please name **no**
none

2. Describe measures that prohibit water uses listed above:

PENALTIES, MANDATORY SHUT OFFS, Moratorium on slope planting.

Water Softeners:

3. Indicate which of the following measures your agency has supported in developing state law:
- a. Allow the sale of more efficient, demand-initiated regenerating DIR models. **yes**
 - b. Develop minimum appliance efficiency standards that:

- i.) Increase the regeneration efficiency standard to at least 3,350 grains of hardness removed per pound of common salt used. yes
- ii.) Implement an identified maximum number of gallons discharged per gallon of soft water produced. yes
- c. Allow local agencies, including municipalities and special districts, to set more stringent standards and/or to ban on-site regeneration of water softeners if it is demonstrated and found by the agency governing board that there is an adverse effect on the reclaimed water or groundwater supply. yes
- 4. Does your agency include water softener checks in home water audit programs? no
- 5. Does your agency include information about DIR and exchange-type water softeners in educational efforts to encourage replacement of less efficient timer models? yes

C. Water Waste Prohibition Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

- 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

None

Reported as of 10/5/05

BMP 14: Residential ULFT Replacement Programs

Reporting Unit: **Trabuco Canyon Water District** BMP Form Status: **100% Complete** Year: **2003**

A. Implementation

	Single-Family Accounts	Multi- Family Units
1. Does your Agency have program(s) for replacing high-water-using toilets with ultra-low flush toilets?	yes	yes

Number of Toilets Replaced by Agency Program During Report Year

Replacement Method	SF Accounts	MF Units
2. Rebate	23	1
3. Direct Install	0	0
4. CBO Distribution	0	0
5. Other	16	62

Total 39 63

6. Describe your agency's ULFT program for single-family residences.

TCWD PARTICIPATES IN A REGION WIDE ULFT REBATE PROGRAM FOR BOTH SF & MF. OUR REGIONAL WHOLESALER (MWDOC) ADMINISTERS THE PROGRAM ON OUR BEHALF. THE CONTRACT WITH A VENDOR TO MARKET THE PROGRAM AND FACILITATE THE REBATE PROCESS FOR OUR CUSTOMERS, THE "OTHER" PROGRAM IS A DISTRIBUTION PROGRAM THAT MWDOC ADMINISTERS ON OUR BEHALF. THEY CONTRACT WITH A SEPARATE VENDOR THAT FACILITATES THE DISTRIBUTION OF ULFT'S TO OUR CUSTOMERS.

7. Describe your agency's ULFT program for multi-family residences.

See No. 6

8. Is a toilet retrofit on resale ordinance in effect for your service area? no

9. List local jurisdictions in your service area in the left box and ordinance citations in each jurisdiction in the right box:

0 0

B. Residential ULFT Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	500	500
2. Actual Expenditures	375	

C. "At Least As Effective As"

- 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

no

D. Comments

None

Reported as of 10/5/05

Water Supply & Reuse

Reporting Unit:

Trabuco Canyon Water District

Year:

2004

Water Supply Source Information

Supply Source Name	Quantity (AF) Supplied	Supply Type
Santiago Aqueduct Commission	2885	Imported
Santa Margarita Water district	102	Imported
TCWD Groundwater	215	Groundwater
TCWD Recycled	853	Recycled
Santiago County Water District	2	Imported
Irvine Ranch Water District	210	Imported

Total AF: 4267

Reported as of 10/5/05

Accounts & Water Use

Reporting Unit Name: **Trabuco Canyon Water District**
Submitted to **CUWCC**
Year: **2004**
11/18/2004

A. Service Area Population Information:

1. Total service area population 13118

B. Number of Accounts and Water Deliveries (AF)

Type	Metered		Unmetered	
	No. of Accounts	Water Deliveries (AF)	No. of Accounts	Water Deliveries (AF)
1. Single-Family	3754	2174	0	0
2. Multi-Family	31	29.65	0	0
3. Commercial	66	135.83	0	0
4. Industrial	0	0	0	0
5. Institutional	0	0	0	0
6. Dedicated Irrigation	97	783.46	0	0
7. Recycled Water	20	770.87	0	0
8. Other	33	0	0	0
9. Unaccounted	NA	0	NA	0
Total	4001	3893.81	0	0

Metered **Unmetered**
Reported as of 10/5/05

Reported as of 10/5/05

BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit: **BMP Form Status: Year:**
Trabuco Canyon Water District 100% Complete 2004

A. Implementation

- 1. Based on your signed MOU date, 08/21/1991, your Agency STRATEGY DUE DATE is: 08/20/1993
- 2. Has your agency developed and implemented a targeting/marketing strategy for SINGLE-FAMILY residential water use surveys? no
- a. If YES, when was it implemented?
- 3. Has your agency developed and implemented a targeting/marketing strategy for MULTI-FAMILY residential water use surveys? no
- a. If YES, when was it implemented?

B. Water Survey Data

Survey Counts:		Single Family Accounts	Multi-Family Units
1. Number of surveys offered:		0	0
2. Number of surveys completed:		0	0

Indoor Survey:

- 3. Check for leaks, including toilets, faucets and meter checks no no
- 4. Check showerhead flow rates, aerator flow rates, and offer to replace or recommend replacement, if necessary no no
- 5. Check toilet flow rates and offer to install or recommend installation of displacement device or direct customer to ULFT replacement program, as necessary; replace leaking toilet flapper, as necessary no no

Outdoor Survey:

- 6. Check irrigation system and timers no no
- 7. Review or develop customer irrigation schedule no no
- 8. Measure landscaped area (Recommended but not required for surveys) no no

9. Measure total irrigable area (Recommended but not required for surveys)

no

no
10. Which measurement method is typically used (Recommended but not required for surveys)

None
11. Were customers provided with information packets that included evaluation results and water savings recommendations?

no

no
12. Have the number of surveys offered and completed, survey results, and survey costs been tracked?

no

no
- a. If yes, in what form are surveys tracked?
- b. Describe how your agency tracks this information.

C. Water Survey Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?

No
- a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

,

E. Comments

None

Reported as of 10/5/05

BMP 02: Residential Plumbing Retrofit

Reporting Unit:

BMP Form Status:

Year:

Trabuco Canyon Water District

100% Complete

2004

A. Implementation

1. Is there an enforceable ordinance in effect in your service area requiring replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts?

no

a. If YES, list local jurisdictions in your service area and code or ordinance in each:

2. Has your agency satisfied the 75% saturation requirement for single-family housing units?

yes

3. Estimated percent of single-family households with low-flow showerheads:

100%

4. Has your agency satisfied the 75% saturation requirement for multi-family housing units?

yes

5. Estimated percent of multi-family households with low-flow showerheads:

86.6%

6. If YES to 2 OR 4 above, please describe how saturation was determined, including the dates and results of any survey research.

In 2000, MWDOC and MET conducted the OC Saturation Survey and found countywide low flow showerhead saturation rates of 66.9% in single family and 59.8% in multifamily dwelling units. Saturation rates provided above represent linear extrapolations of saturation survey results for 02-03 and 03-04.

B. Low-Flow Device Distribution Information

1. Has your agency developed a targeting/ marketing strategy for distributing low-flow devices?

no

a. If YES, when did your agency begin implementing this strategy?

b. Describe your targeting/ marketing strategy.

Low-Flow Devices Distributed/ Installed	SF Accounts	MF Units
2. Number of low-flow showerheads distributed:	0	0
3. Number of toilet-displacement devices distributed:	0	0
4. Number of toilet flappers distributed:	0	0
5. Number of faucet aerators distributed:	0	0

6. Does your agency track the distribution and cost of low-flow devices? no
- a. If YES, in what format are low-flow devices tracked?
 - b. If yes, describe your tracking and distribution system :

C. Low-Flow Device Distribution Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No
- a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

None

Reported as of 10/5/05

BMP 03: System Water Audits, Leak Detection and Repair

Reporting Unit: **Trabuco Canyon Water District** BMP Form Status: **100% Complete** Year: **2004**

A. Implementation

- | | |
|--|------|
| 1. Has your agency completed a pre-screening system audit for this reporting year? | yes |
| 2. If YES, enter the values (AF/Year) used to calculate verifiable use as a percent of total production: | |
| a. Determine metered sales (AF) | 3050 |
| b. Determine other system verifiable uses (AF) | 112 |
| c. Determine total supply into the system (AF) | 3120 |
| d. Using the numbers above, if (Metered Sales + Other Verifiable Uses) / Total Supply is < 0.9 then a full-scale system audit is required. | 1.01 |
| 3. Does your agency keep necessary data on file to verify the values used to calculate verifiable uses as a percent of total production? | yes |
| 4. Did your agency complete a full-scale audit during this report year? | no |
| 5. Does your agency maintain in-house records of audit results or the completed AWWA audit worksheets for the completed audit? | yes |
| 6. Does your agency operate a system leak detection program? | yes |
| a. If yes, describe the leak detection program: | |

Meters starting with highest users by zone, compare actual use against purchases, taking into account reservoir levels, etc.

B. Survey Data

- | | |
|--|----|
| 1. Total number of miles of distribution system line. | 56 |
| 2. Number of miles of distribution system line surveyed. | 20 |

C. System Audit / Leak Detection Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	10000	10000
2. Actual Expenditures	6000	

D. "At Least As Effective As"

- | | |
|---|-----|
| 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? | yes |
|---|-----|

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

TCWD has a meter replacement program. Meters measuring 3" to 10" have been tested, repaired, or replaced as necessary.

E. Comments

None

Reported as of 10/5/05

BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing

Reporting Unit: **Trabuco Canyon Water District** BMP Form Status: **100% Complete** Year: **2004**

A. Implementation

1. Does your agency require meters for all new connections and bill by volume-of-use? yes
2. Does your agency have a program for retrofitting existing unmetered connections and bill by volume-of-use? no
 - a. If YES, when was the plan to retrofit and bill by volume-of-use existing unmetered connections completed?
 - b. Describe the program:
3. Number of previously unmetered accounts fitted with meters during report year. 0

B. Feasibility Study

1. Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters? no
 - a. If YES, when was the feasibility study conducted? (mm/dd/yy)
 - b. Describe the feasibility study:
2. Number of CIL accounts with mixed-use meters. 0
3. Number of CIL accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period. 0

C. Meter Retrofit Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	0

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? yes
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

All accounts are metered and there are no mixed use accounts.

E. Comments

None

Reported as of 10/5/05

BMP 05: Large Landscape Conservation Programs and Incentives

Reporting Unit: **Trabuco Canyon Water District** BMP Form Status: **100% Complete** Year: **2004**

A. Water Use Budgets

- | | |
|--|------|
| 1. Number of Dedicated Irrigation Meter Accounts: | 7 |
| 2. Number of Dedicated Irrigation Meter Accounts with Water Budgets: | 7 |
| 3. Budgeted Use for Irrigation Meter Accounts with Water Budgets (AF): | 1400 |
| 4. Actual Use for Irrigation Meter Accounts with Water Budgets (AF): | 1269 |
| 5. Does your agency provide water use notices to accounts with budgets each billing cycle? | yes |

B. Landscape Surveys

- | | |
|--|------------|
| 1. Has your agency developed a marketing / targeting strategy for landscape surveys? | yes |
| a. If YES, when did your agency begin implementing this strategy? | 04/04/1996 |
| b. Description of marketing / targeting strategy: | |

Offered, no one took advantage of offer

- | | |
|--|---|
| 2. Number of Surveys Offered. | 0 |
| 3. Number of Surveys Completed. | 0 |
| 4. Indicate which of the following Landscape Elements are part of your survey: | |

- | | |
|---|----|
| a. Irrigation System Check | no |
| b. Distribution Uniformity Analysis | no |
| c. Review / Develop Irrigation Schedules | no |
| d. Measure Landscape Area | no |
| e. Measure Total Irrigable Area | no |
| f. Provide Customer Report / Information | no |
| 5. Do you track survey offers and results? | no |
| 6. Does your agency provide follow-up surveys for previously completed surveys? | no |
| a. If YES, describe below: | |

C. Other BMP 5 Actions

- 1. An agency can provide mixed-use accounts with ETo-based landscape budgets in lieu of a large landscape survey program.
Does your agency provide mixed-use accounts with landscape budgets?
0
- 2. Number of CII mixed-use accounts with landscape budgets.
no
- 3. Do you offer landscape irrigation training?
no
- 4. Does your agency offer financial incentives to improve landscape water use efficiency?

Type of Financial Incentive:	Budget (Dollars/Year)	Number Awarded to Customers	Total Amount Awarded
a. Rebates	0	0	0
b. Loans	0	0	0
c. Grants	0	0	0

5. Do you provide landscape water use efficiency information to new customers and customers changing services?
yes

a. If YES, describe below:

Landscape water usage is provided at least bi-monthly in monthly newsletter. Brochures are distributed to new accounts with water efficiency

6. Do you have irrigated landscaping at your facilities?
no

a. If yes, is it water-efficient?

b. If yes, does it have dedicated irrigation metering?

7. Do you provide customer notices at the start of the irrigation season?
yes

8. Do you provide customer notices at the end of the irrigation season?
yes

D. Landscape Conservation Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	2000	2000
2. Actual Expenditures	2100	

E. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as"
No

variant of this BMP?

- a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

F. Comments

THE METERS LISTED ABOVE ARE UNDER BUDGET AS PART OF MUNICIPAL WATER DISTRICT OF ORANGE COUNTY'S LANDSCAPE CERTIFICATION PROGRAM. THIS HAS BEEN A TWO-YEAR EFFORT COVERING 2003 & 2004. ALL DATA IS LISTED IN REPORTING YEAR 2002. INCLUDED IN THIS PROGRAM IS AN INFORMAL SURVEY PROCESS. SINCE IT IS INFORMAL, UNDER B ABOVE, #2 & #3 ARE LISTED AS ZERO WHILE THE COMPONENTS OF THE INFORMAL PROCESS ARE MARKED AS YES IN #4.

Reported as of 10/5/05

BMP 06: High-Efficiency Washing Machine Rebate Programs

Reporting Unit: **Trabuco Canyon Water District** BMP Form Status: **100% Complete** Year: **2004**

A. Implementation

1. Do any energy service providers or waste water utilities in your service area offer rebates for high-efficiency washers? yes

a. If YES, describe the offerings and incentives as well as who the energy/waste water utility provider is.

Southern Calif. Edison, Pacific Gas & Electric and San Diego Gas & Electric.

2. Does your agency offer rebates for high-efficiency washers? no

3. What is the level of the rebate? 100

4. Number of rebates awarded. 76

B. Rebate Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	500	500
2. Actual Expenditures	375	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

None

Reported as of 10/5/05

BMP 07: Public Information Programs

Reporting Unit: **BMP Form Status: Year:**
Trabuco Canyon Water District 100% Complete 2004

A. Implementation

1. Does your agency maintain an active public information program to promote and educate customers about water conservation? **yes**
- a. If YES, describe the program and how it's organized.

Monthly Newsletter to customer base, water and wastewater plant tours, open house and brochure distribution

2. Indicate which and how many of the following activities are included in your public information program.

Public Information Program Activity	Yes/No	Number of Events
a. Paid Advertising	no	0
b. Public Service Announcement	yes	3
c. Bill Inserts / Newsletters / Brochures	yes	12
d. Bill showing water usage in comparison to previous year's usage	no	
e. Demonstration Gardens	no	
f. Special Events, Media Events	yes	3
g. Speaker's Bureau	no	0
h. Program to coordinate with other government agencies, industry and public interest groups and media	yes	

B. Conservation Information Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	10000	10000
2. Actual Expenditures	9709	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? **No**

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments
None

Reported as of 10/5/05

BMP 08: School Education Programs

Reporting Unit: **Trabuco Canyon Water District** BMP Form Status: **100% Complete** Year: **2004**

A. Implementation

1. Has your agency implemented a school information program to promote water conservation? yes

2. Please provide information on your school programs (by grade level):

Grade	Are grade-appropriate materials distributed?	No. of presentations	No. of students reached	No. of teachers' workshops
-------	--	----------------------	-------------------------	----------------------------

Grades K-3rd	yes	9	497	0
Grades 4th-6th	yes	9	214	0
Grades 7th-8th	no	0	0	0
High School	no	0	0	0

3. Did your Agency's materials meet state education framework requirements? yes

4. When did your Agency begin implementing this program? 01/01/1989

B. School Education Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Implemented through MWDOC

Reported as of 10/5/05

BMP 09: Conservation Programs for CII Accounts

Reporting Unit: **Trabuco Canyon Water District** BMP Form Status: **100% Complete** Year: **2004**

A. Implementation

1. Has your agency identified and ranked COMMERCIAL customers according to use?	yes
2. Has your agency identified and ranked INDUSTRIAL customers according to use?	no
3. Has your agency identified and ranked INSTITUTIONAL customers according to use?	no

Option A: CII Water Use Survey and Customer Incentives Program

4. Is your agency operating a CII water use survey and customer incentives program for the purpose of complying with BMP 9 under this option?

CII Surveys	Commercial Accounts	Industrial Accounts	Institutional Accounts	
a. Number of New Surveys Offered	0	0	0	no
b. Number of New Surveys Completed	0	0	0	
c. Number of Site Follow-ups of Previous Surveys (within 1 yr)	0	0	0	
d. Number of Phone Follow-ups of Previous Surveys (within 1 yr)	0	0	0	

CII Survey Components

	Commercial Accounts	Industrial Accounts	Institutional Accounts
e. Site Visit	no	no	no
f. Evaluation of all water-using apparatus and processes	no	no	no
g. Customer report identifying recommended efficiency measures,	no	no	no

paybacks and agency incentives

Agency CII Customer Incentives	Budget (\$/Year)	No. Awarded to Customers	Total \$ Amount Awarded
h. Rebates	0	0	0
i. Loans	0	0	0
j. Grants	0	0	0
k. Others	0	0	0

Option B: CII Conservation Program Targets

5. Does your agency track CII program interventions and water savings for the purpose of complying with BMP 9 under this option?

yes
6. Does your agency document and maintain records on how savings were realized and the method of calculation for estimated savings?

yes
7. Estimated annual savings (AF/yr) from site-verified actions taken by agency since 1991.

0
8. Estimated annual savings (AF/yr) from non-site-verified actions taken by agency since 1991.

0

B. Conservation Program Expenditures for CII Accounts

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?

No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

TCWD PARTICIPATES IN A REGIONAL WHOLESALER (METROPOLITAN WATER DISTRICT OF S.C.) REBATE PROGRAM. WE HAVE PUT IN THE NUMBER OF REBATES BUT NOT THE DOLLAR AMOUNTS OR ACRE/FEET ASSOCIATED WITH THEM. METROPOLITAN TRACKS THESE.

Reported as of 10/5/05

BMP 09a: CII ULFT Water Savings

Reporting Unit: **BMP Form Status:** **Year:**
Trabuco Canyon Water District **100% Complete** **2004**

1. Did your agency implement a CII ULFT replacement program in the reporting year?
 If No, please explain why on Line B. 10.

Yes

A. Targeting and Marketing

1. What basis does your agency use to target customers for participation in this program?
 Check all that apply.

Service area zones
 CII Sector or subsector

- a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

SEE MWDSC PROGRAM DESCRIPTION FOR DETAILS.

2. How does your agency advertise this program? Check all that apply.

Newsletter

- a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

Newsletter

B. Implementation

1. Does your agency keep and maintain customer participant information? (Read the Help information for a complete list of all the information for this BMP.) Yes
 2. Would your agency be willing to share this information if the CUWCC did a study to evaluate the program on behalf of your agency? Yes
 3. What is the total number of customer accounts participating in the program during the last year? 1

CII Subsector	Number of Toilets Replaced			
	Standard Gravity Tank	Air Assisted	Valve Floor Mount	Valve Wall Mount
4.				
a. Offices	0	0	0	0
b. Retail / Wholesale	0	0	0	0

c. Hotels	0	0	0	0	0
d. Health	0	0	0	0	0
e. Industrial	0	0	0	0	0
f. Schools: K to 12	0	0	0	0	0
g. Eating	0	0	0	0	0
h. Govern- ment	0	0	0	0	0
i. Churches	0	0	0	0	0
j. Other	0	0	0	0	0

5. Program design.

6. Does your agency use outside services to implement this program?

a. If yes, check all that apply.

7. Participant tracking and follow-up.

8. Based on your program experience, please rank on a scale of 1 to 5, with 1 being the least frequent cause and 5 being the most frequent cause, the following reasons why customers refused to participate in the program.

a. Disruption to business

b. Inadequate payback

c. Inadequate ULFT performance

d. Lack of funding

e. American's with Disabilities Act

f. Permitting

g. Other. Please describe in B. 9.

9. Please describe general program acceptance/resistance by customers, obstacles to implementation, and other issues affecting program implementation or effectiveness.

SEE MWDSC PROGRAM DESCRIPTION

SEE MWDSC PROGRAM DESCRIPTION

C. Conservation Program Expenditures for CII ULFT

1. CII ULFT Program: Annual Budget & Expenditure Data

	Budgeted	Actual Expenditure
a. Labor	0	0
b. Materials	0	0
c. Marketing & Advertising	0	0
d. Administration & Overhead	0	0
e. Outside Services	0	0
f. Total	0	0

2. CII ULFT Program: Annual Cost Sharing

a. Wholesale agency contribution	0
b. State agency contribution	0
c. Federal agency contribution	0
d. Other contribution	0
e. Total	0

D. Comments

None

.

Reported as of 10/5/05

BMP 11: Conservation Pricing

Reporting Unit: **Trabuco Canyon Water District**
BMP Form Status: **100% Complete**
Year: **2004**

A. Implementation

Rate Structure Data Volumetric Rates for Water Service by Customer Class

1. Residential

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	\$1839785
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$675421

2. Commercial

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	\$114662
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

3. Industrial

a. Water Rate Structure	Service Not Provided
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

4. Institutional / Government

a. Water Rate Structure	Service Not Provided
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

5. Irrigation

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$743364
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

6. Other

a. Water Rate Structure	Service Not Provided
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	\$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$0

B. Conservation Pricing Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No
---	----

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

None

Reported as of 10/5/05

BMP 12: Conservation Coordinator

Reporting Unit:

Trabuco Canyon Water District

BMP Form Status:

100% Complete

Year:

2004**A. Implementation**

1. Does your Agency have a conservation coordinator? yes
2. Is this a full-time position? no
3. If no, is the coordinator supplied by another agency with which you cooperate in a regional conservation program ? yes
4. Partner agency's name:

MUNICIPAL WATER
DISTRICT OF ORANGE
COUNTY

5. If your agency supplies the conservation coordinator:

- a. What percent is this conservation coordinator's position? 5%
- b. Coordinator's Name Sharon E. Smith
- c. Coordinator's Title District Services Supervisor
- d. Coordinator's Experience and Number of Years 17
- e. Date Coordinator's position was created (mm/dd/yyyy) 07/01/1990

6. Number of conservation staff, including Conservation Coordinator. 1

B. Conservation Staff Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? yes

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

MWDOC HAS AN EXTREMELY ACTIVE CONSERVATION STAFF THAT IS AT THE DISPOSAL OF TCWD. THE AGENCIES HAVE WORKED CLOSE TOGETHER TO DETERMINE FEASIBILITY AND

COST EFFECTIVENESS OF IMPLEMENTING VARIOUS BMP
CONSERVATION PROGRAMS. THE MAJORITY OF CONSERVATION
REALTED BROCHURES ARE RECEIVED THROUGH MWDOC OR
MWDSC

D. Comments

None

Reported as of 10/5/05

BMP 13: Water Waste Prohibition

Reporting Unit: **Trabuco Canyon Water District** BMP Form Status: **100% Complete** Year: **2004**

A. Requirements for Documenting BMP Implementation

1. Is a water waste prohibition ordinance in effect in your service area? yes

a. If YES, describe the ordinance:

ORDINANCE NO 91-14 MANDATORY WATER CONSERVATION
PLAN 3 STAGE PLAN TO MEET UP TO 50% REDUCTION
CONSUMPTIVE LIMITS & PENALTIES FOR EXCESSIVE USE.

2. Is a copy of the most current ordinance(s) on file with CUWCC? yes

a. List local jurisdictions in your service area in the first text box and
water waste ordinance citations in each jurisdiction in the second text
box:

None

None

B. Implementation

1. Indicate which of the water uses listed below are prohibited by
your agency or service area.

- a. Gutter flooding yes
- b. Single-pass cooling systems for new connections no
- c. Non-recirculating systems in all new conveyor or car wash
systems no
- d. Non-recirculating systems in all new commercial laundry
systems no
- e. Non-recirculating systems in all new decorative fountains yes
- f. Other, please name
None no

2. Describe measures that prohibit water uses listed above:

PENALTIES, MANDATORY SHUT OFFS, Moratorium on slope planting.

Water Softeners:

3. Indicate which of the following measures your agency has
supported in developing state law:

- a. Allow the sale of more efficient, demand-initiated
regenerating DFR models. yes
- b. Develop minimum appliance efficiency standards that:

- i.) Increase the regeneration efficiency standard to at least 3,350 grains of hardness removed per pound of common salt used.

yes
- ii.) Implement an identified maximum number of gallons discharged per gallon of soft water produced.

yes
- c. Allow local agencies, including municipalities and special districts, to set more stringent standards and/or to ban on-site regeneration of water softeners if it is demonstrated and found by the agency governing board that there is an adverse effect on the reclaimed water or groundwater supply.

yes
4. Does your agency include water softener checks in home water audit programs?

no
5. Does your agency include information about DIR and exchange-type water softeners in educational efforts to encourage replacement of less efficient timer models?

yes

C. Water Waste Prohibition Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?

no
- a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

None

BMP 14: Residential ULFT Replacement Programs

Reporting Unit: **Trabuco Canyon Water District** BMP Form Status: **100% Complete** Year: **2004**

A. Implementation

1. Does your Agency have program(s) for replacing high-water-using toilets with ultra-low flush toilets?	yes	yes
Number of Toilets Replaced by Agency Program During Report Year		
Replacement Method	SF Accounts	MF Units
2. Rebate	14	1
3. Direct Install	0	0
4. CBO Distribution	0	0
5. Other	13	2

Total 27 3

6. Describe your agency's ULFT program for single-family residences.

TCWD PARTICIPATES IN A REGION WIDE ULFT REBATE PROGRAM FOR BOTH SF & MF. OUR REGIONAL WHOLESALER (MWDOC) ADMINISTERS THE PROGRAM ON OUR BEHALF. THE CONTRACT WITH A VENDOR TO MARKET THE PROGRAM AND FACILITATE THE REBATE PROCESS FOR OUR CUSTOMERS. THE "OTHER" PROGRAM IS A DISTRIBUTION PROGRAM THAT MWDOC ADMINISTERS ON OUR BEHALF. THEY CONTRACT WITH A SEPARATE VENDOR THAT FACILITATES THE DISTRIBUTION OF ULFT'S TO OUR CUSTOMERS.

7. Describe your agency's ULFT program for multi-family residences.

- See No. 6
8. Is a toilet retrofit on resale ordinance in effect for your service area? no
9. List local jurisdictions in your service area in the left box and ordinance citations in each jurisdiction in the right box:

0 0

B. Residential ULFT Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	500	500
2. Actual Expenditures	400	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?
- a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."
- no

D. Comments

None

Appendix F
California Urban Water Conservation Council
Best Management Practices Coverage Reports
2003 and 2004

Reported as of 10/5/05

BMP 01 Coverage: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit:
 Trabuco Canyon Water District
 Reporting Period:
 03-04

MOU Exhibit 1 Coverage Requirement

No exemption request filed
 Agency indicated "at least as effective as" implementation during report period? No

A Reporting Unit (RU) must meet three conditions to satisfy strict compliance for BMP 1.

- Condition 1: Adopt survey targeting and marketing strategy on time
- Condition 2: Offer surveys to 20% of SF accounts and 20% of MF units during report period
- Condition 3: Be on track to survey 15% of SF accounts and 15% of MF units within 10 years of implementation start date.

Test for Condition 1

Trabuco Canyon Water District to Implement Targeting/Marketing Program by:	1999
Year Trabuco Canyon Water District Reported Implementing Targeting/Marketing Program:	
Trabuco Canyon Water District Met Targeting/Marketing Coverage Requirement:	NO NO

Test for Condition 2

		<u>Single-Family</u>	<u>Multi-Family</u>
Survey Program to Start by:	1998	Residential Survey Offers (%)	
Reporting Period:	03-04	Survey Offers ≥ 20%	NO NO

Test for Condition 3

Completed Residential
Surveys

Single Family Multi-Family

Total Completed Surveys 1999 - 2004: Past Credit for Surveys Completed Prior to 1999 (Implementation of Reporting Database):	160	
Total + Credit	160	
Residential Accounts in Base Year	3,578	184
Trabuco Canyon Water District Survey Coverage as % of Base Year Residential Accounts	4.47%	
Coverage Requirement by Year 7 of Implementation per Exhibit 1	7.90%	7.90%
Trabuco Canyon Water District on Schedule to Meet 10-Year Coverage Requirement	NO	NO

BMP 1 COVERAGE STATUS SUMMARY:
Water supplier has not met one or more coverage requirements for this BMP.

..

Reported as of 10/5/05

BMP 02 Coverage: Residential Plumbing Retrofit

Reporting Unit:

Trabuco Canyon Water District

Reporting Period:

03-04

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period?

No

An agency must meet one of three conditions to satisfy strict compliance for BMP 2.

Condition 1: The agency has demonstrated that 75% of SF accounts and 75% of MF units constructed prior to 1992 are fitted with low-flow showerheads.

Condition 2: An enforceable ordinance requiring the replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts is in place for the agency's service area.

Condition 3: The agency has distributed or directly installed low-flow showerheads and other low-flow plumbing devices to not less than 10% of single-family accounts and 10% of multi-family units constructed prior to 1992 during the reporting period.

Test for Condition 1

Report Year	Report Period	Single-Family		Multi-Family	
		Reported Saturation	Saturation ≥ 75%?	Reported Saturation	Saturation ≥ 75%?
1999	99-00	60.00%	NO	65.00%	NO
2000	99-00	60.00%	NO	65.00%	NO
2001	01-02	68.00%	NO	60.00%	NO
2002	01-02	68.00%	NO	60.00%	NO
2003	03-04	91.70%	YES	79.90%	YES
2004	03-04	100.00%	YES	86.60%	YES

Test for Condition 2

Report Year	Report Period	Trabuco Canyon Water District has ordinance requiring showerhead retrofit?
1999	99-00	NO
2000	99-00	NO
2001	01-02	NO
2002	01-02	NO

2003	03-04	NO
2004	03-04	NO

Test for Condition 3

Reporting Period:	03-04		
1992 SF Accounts	Num. Showerheads Distributed to SF Accounts	Single-Family Coverage Ratio	SF Coverage Ratio > 10%
2,139			NO
1992 MF Accounts	Num. Showerheads Distributed to MF Accounts	Multi-Family Coverage Ratio	MF Coverage Ratio > 10%
184			NO

BMP 2 COVERAGE STATUS SUMMARY:

Water supplier is meeting coverage requirements for this BMP.

"

Reported as of 10/5/05

BMP 03 Coverage: System Water Audits, Leak Detection and Repair

Reporting Unit: Reporting Period:

Trabuco Canyon Water District 03-04

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? Yes

An agency must meet one of two conditions to be in compliance with BMP 3:

- Condition 1: Perform a prescreening audit. If the result is equal to or greater than 0.9 nothing more needs be done.
- Condition 2: Perform a prescreening audit. If the result is less than 0.9, perform a full audit in accordance with AWWA's Manual of Water Supply Practices, Water Audits, and Leak Detection.

Test for Conditions 1 and 2

Report Year	Report Period	Pre-Screen Completed	Pre-Screen Result	Full Audit Indicated	Full Audit Completed
1999	99-00	YES	94.3%	No	NO
2000	99-00	YES	97.1%	No	NO
2001	01-02	YES	106.1%	No	NO
2002	01-02	YES	100.5%	No	YES
2003	03-04	YES	98.0%	No	NO
2004	03-04	YES	101.3%	No	NO

BMP 3 COVERAGE STATUS SUMMARY:

Water supplier is meeting coverage requirements for this BMP.

Reported as of 10/5/05

BMP 04 Coverage: Metering with Commodity Rates for all New Connections and Retrofit of Existing

Reporting Unit: Trabuco Canyon Water District
Reporting Period: 03-04

MOU Exhibit 1 Coverage Requirement

No exemption request filed
Agency indicated "at least as effective as" implementation during report period? Yes

An agency must be on track to retrofit 100% of its unmetered accounts within 10 years to be in compliance with BMP 4.

Test for Compliance

Total Meter Retrofits Reported through 2004	
No. of Unmetered Accounts in Base Year	
Meter Retrofit Coverage as % of Base Year Unmetered Accounts	.
Coverage Requirement by Year 6 of Implementation per Exhibit 1	42.0%
RU on Schedule to meet 10 Year Coverage Requirement	YES

BMP 4 COVERAGE STATUS SUMMARY:
Water supplier is meeting coverage requirements for this BMP.

Reported as of 10/5/05

BMP 05 Coverage: Large Landscape Conservation Programs and Incentives

Reporting Unit: Reporting Period:

Trabuco Canyon Water District

03-04

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period?

No

An agency must meet three conditions to comply with BMP 5.

Condition 1: Develop water budgets for 90% of its dedicated landscape meter accounts within four years of the date implementation is to start.

Condition 2: (a) Offer landscape surveys to at least 20% of its CII accounts with mixed use meters each report cycle and be on track to survey at least 15% of its CII accounts with mixed use meters within 10 years of the date implementation is to start OR (b) Implement a dedicated landscape meter retrofit program for CII accounts with mixed use meters or assign landscape budgets to mixed use meters.

Condition 3: Implement and maintain customer incentive program(s) for irrigation equipment retrofits.

Test for Condition 1

Year	Report Period	BMP 5 Implementation Year	No. of Irrigation Meter Accounts	No. of Irrigation Accounts with Budgets	Budget Coverage Ratio	90% Coverage Met by Year 4
1999	99-00	1	7	7	100.0%	NA
2000	99-00	2	7	7	100.0%	NA
2001	01-02	3	7	7	100.0%	NA
2002	01-02	4	7	7	100.0%	Yes
2003	03-04	5	7	7	100.0%	Yes
2004	03-04	6	7	7	100.0%	Yes

Test for Condition 2a (survey offers)

Select Reporting Period: 03-04
Large Landscape Survey Offers as % of Mixed Use Meter CII Accounts
Survey Offers Equal or Exceed 20% Coverage Requirement NO

Test for Condition 2a (surveys completed)

Total Completed Landscape Surveys Reported through Credit for Surveys Completed Prior to Implementation of Reporting Database	3
Total + Credit	3
CII Accounts in Base Year	199
RU Survey Coverage as a % of Base Year CII Accounts	1.5%
Coverage Requirement by Year of Implementation per Exhibit 1	6.3%
RU on Schedule to Meet 10 Year Coverage Requirement	NO

Test for Condition 2b (mixed use budget or meter retrofit program)

Report Year	Report Period	BMP 5 Implementation Year	Agency has mixed-use budget program	No. of mixed-use budgets
1999	99-00	1	NO	
2000	99-00	2	NO	
2001	01-02	3	NO	
2002	01-02	4	NO	
2003	03-04	5	NO	
2004	03-04	6	NO	
Report Year	Report Period	BMP 4 Implementation Year	No. of mixed use CII accounts	No. of mixed use CII accounts fitted with irrig. meters
1999	99-00	1		
2000	99-00	2		
2001	01-02	3		
2002	01-02	4		
2003	03-04	5		
2004	03-04	6		

Test for Condition 3

Report Year	Report Period	BMP 5 Implementation Year	RU offers financial incentives?	No. of Loans	Total Amt. Loans
1999	99-00	1	NO		
2000	99-00	2	NO		
2001	01-02	3	NO		
2002	01-02	4	NO		

BMP 5 COVERAGE STATUS SUMMARY:
Water supplier has not met one or more coverage requirements for this BMP.

BMP 06 Coverage: High-Efficiency Washing Machine Rebate Programs

Reporting Unit:

Reporting Period:

Trabuco Canyon Water District

03-04

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period?

No

An agency must meet one condition to comply with BMP 6.

Condition 1: Offer a cost-effective financial incentive for high-efficiency washers if one or more energy service providers in service area offer financial incentives for high-efficiency washers.

Test for Condition 1

Year	Report Period	BMP 6 Implementation Year	Rebate Offered by ESP?	Rebate Offered by RUT	Rebate Amount
1999	99-00	1	YES	NO	110.00
2000	99-00	2	YES	NO	110.00
2001	01-02	3	NO	NO	
2002	01-02	4	YES	YES	100.00
2003	03-04	5	YES	NO	100.00
2004	03-04	6	YES	NO	100.00

Year	Report Period	BMP 6 Implementation Year	No. Rebates Awarded	Coverage Met?
1999	99-00	1		NO
2000	99-00	2		NO
2001	01-02	3		YES
2002	01-02	4	10	YES
2003	03-04	5	63	NO
2004	03-04	6	76	NO

BMP 6 COVERAGE STATUS SUMMARY:

Water supplier has not met one or more coverage requirements for this BMP.

Reported as of 10/5/05

BMP 07 Coverage: Public Information Programs

Reporting Unit:

Trabuco Canyon Water District

Reporting Period:

03-04

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period?

Yes

An agency must meet one condition to comply with BMP 7.

Condition 1: Implement and maintain a public information program consistent with BMP 7's definition.

Test for Condition 1

Year	Report Period	BMP 7 Implementation Year	RU Has Public Information Program?
1999	99-00	2	YES
2000	99-00	3	YES
2001	01-02	4	YES
2002	01-02	5	YES
2003	03-04	6	YES
2004	03-04	7	YES

BMP 7 COVERAGE STATUS SUMMARY:

Water supplier is meeting coverage requirements for this BMP.

Reported as of 10/5/05

BMP 08 Coverage: School Education Programs

Reporting Unit: Reporting Period:

Trabuco Canyon Water District 03-04

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period?

No

An agency must meet one condition to comply with BMP 8.

Condition 1: Implement and maintain a school education program consistent with BMP 8's definition.

Test for Condition 1

<u>Year</u>	<u>Report Period</u>	<u>BMP 8 Implementation Year</u>	<u>RU Has School Education Program?</u>
1999	99-00	2	YES
2000	99-00	3	YES
2001	01-02	4	YES
2002	01-02	5	YES
2003	03-04	6	YES
2004	03-04	7	YES

BMP 8 COVERAGE STATUS SUMMARY:

Water supplier is meeting coverage requirements for this BMP.

Reported as of 10/5/05

BMP 09 Coverage: Conservation Programs for CII Accounts

Reporting Unit: Reporting Period:

Trabuco Canyon Water District

03-04

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period?

No

An agency must meet three conditions to comply with BMP 9.

Condition 1: Agency has identified and ranked by use commercial, industrial, and institutional accounts.

Condition 2(a): Agency is on track to survey 10% of commercial accounts, 10% of industrial accounts, and 10% of institutional accounts within 10 years of date implementation to commence.

OR

Condition 2(b): Agency is on track to reduce CII water use by an amount equal to 10% of baseline use within 10 years of date implementation to commence.

OR

Condition 2(c): Agency is on track to meet the combined target as described in Exhibit 1 BMP 9 documentation.

Test for Condition 1

Year	Report Period	BMP 9 Implementation Year	Ranked Com. Use	Ranked Ind. Use	Ranked Inst. Use
1999	99-00	1	YES	NO	NO
2000	99-00	2	YES	NO	NO
2001	01-02	3	YES	YES	YES
2002	01-02	4	YES	YES	YES
2003	03-04	5	YES	NO	NO
2004	03-04	6	YES	NO	NO

Test for Condition 2a

	Commercial	Industrial	Institutional
Total Completed Surveys Reported through 2004			
Credit for Surveys Completed Prior to Implementation of Reporting Databases	3		
Total + Credit	3		

CII Accounts in Base Year	199	
RU Survey Coverage as % of Base Year CII Accounts	1.5%	
Coverage Requirement by Year 6 of Implementation per Exhibit 1	4.2%	4.2%
RU on Schedule to Meet 10 Year Coverage Requirement	NO	NO

Test for Condition 2a

Year	Report Period	BMP 9 Implementation Year	Performance Target Savings (AF/yr)	Performance Target Savings Coverage	Performance Target Savings Coverage Requirement	Coverage Requirement Met
1999	99-00	1			0.5%	NO
2000	99-00	2			1.0%	NO
2001	01-02	3			1.7%	NO
2002	01-02	4			2.4%	NO
2003	03-04	5			3.3%	NO
2004	03-04	6			4.2%	NO

Test for Condition 2c

Total BMP 9 Surveys + Credit	3
BMP 9 Survey Coverage	1.5%
BMP 9 Performance Target Coverage	
BMP 9 Survey + Performance Target Coverage	1.5%
Combined Coverage Equals or Exceeds Coverage Requirement?	NO

BMP 9 COVERAGE STATUS SUMMARY:
Water supplier has not met one or more coverage requirements for this BMP.

Reported as of 10/5/05

BMP 11 Coverage: Conservation Pricing

Reporting Unit:

Trabuco Canyon Water District

Reporting Period:

03-04

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period?

No

An agency must meet one condition to comply with BMP 11.

Agency shall maintain rate structure consistent with BMP 11's definition of conservation pricing. Implementation methods shall be at least as effective as eliminating non-conserving pricing and adopting conserving pricing. For signatories supplying both water and sewer service, this BMP applies to pricing of both water and sewer service. Signatories that supply water but not sewer service shall make good faith efforts to work with sewer agencies so that those sewer agencies adopt conservation pricing for sewer service.

a) Non-conserving pricing provides no incentives to customers to reduce use. Such pricing is characterized by one or more of the following components: rates in which the unit price decreases as the quantity used increases (declining block rates); rates that involve charging customers a fixed amount per billing cycle regardless of the quantity used; pricing in which the typical bill is determined by high fixed charges and low commodity charges.

b) Conservation pricing provides incentives to customers to reduce average or peak use, or both. Such pricing includes: rates designed to recover the cost of providing service; and billing for water and sewer service based on metered water use. Conservation pricing is also characterized by one or more of the following components: rates in which the unit rate is constant regardless of the quantity used (uniform rates) or increases as the quantity used increases (increasing block rates); seasonal rates or excess-use surcharges to reduce peak demands during summer months; rates based upon the longrun marginal cost or the cost of adding the next unit of capacity to the system.

Test for Condition 1

Year	Report Period	RU Employed Non Conserving Rate Structure	RU Meets BMP 11 Coverage Requirement
1999	99-00	NO	YES
2000	99-00	NO	YES
2001	01-02	NO	YES
2002	01-02	NO	YES
2003	03-04	NO	YES
2004	03-04	NO	YES

BMP 11 COVERAGE STATUS SUMMARY:

Water supplier is meeting coverage requirements for this BMP.

Reported as of 10/5/05

BMP 12 Coverage: Conservation Coordinator

Reporting Unit:

Trabuco Canyon Water District

Reporting Period:

03-04

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period?

Yes

Agency shall staff and maintain the position of conservation coordinator and provide support staff as necessary.

Test for Compliance

Report Year	Report Period	Conservation Coordinator Position Staffed?	Total Staff on Team (incl. CC)
1999	99-00	YES	1
2000	99-00	YES	1
2001	01-02	YES	1
2002	01-02	YES	1
2003	03-04	YES	1
2004	03-04	YES	1

BMP 12 COVERAGE STATUS SUMMARY:

Water supplier is meeting coverage requirements for this BMP.

Reported as of 10/5/05

BMP 13 Coverage: Water Waste Prohibition

Reporting Unit:

Trabuco Canyon Water District

Reporting Period:

03-04

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period?

No

An agency must meet one condition to comply with BMP 13.

Implementation methods shall be enacting and enforcing measures prohibiting gutter flooding, single pass cooling systems in new connections, non-recirculating systems in all new conveyor car wash and commercial laundry systems, and non-recycling decorative water fountains.

Test for Condition 1

Agency or service area prohibits:

Year	Gutter Flooding	Single-Pass Cooling Systems	Single-Pass Car Wash	Single-Pass Laundry	Single-Pass Fountains	Other	RU has ordinance that meets coverage requirement
1999	yes	no	no	no	yes	no	NO
2000	yes	no	yes	yes	yes	no	NO
2001	yes	no	no	no	yes	no	NO
2002	yes	no	no	no	yes	no	NO
2003	yes	no	no	no	yes	no	NO
2004	yes	no	no	no	yes	no	NO

BMP 13 COVERAGE STATUS SUMMARY:

Water supplier has not met one or more coverage requirements for this BMP.

Reported as of 10/5/05

BMP 14 Coverage: Residential ULFT Replacement Programs

Reporting Unit: Trabuco Canyon Water District

MOU Exhibit 1 Coverage Requirement

A Reporting Unit (RU) must meet one of the following conditions to be in compliance with BMP 14.

- Condition 1: Retrofit-on-resale (ROR) ordinance in effect in service area.
- Condition 2: Water savings from toilet replacement programs equal to 90% of Exhibit 6 coverage requirement.
- An agency with an exemption for BMP 14 is not required to meet one of the above conditions. This report treats an agency with missing base year data required to compute the Exhibit 6 coverage requirement as out of compliance with BMP 14.

Status: Water supplier is meeting coverage requirements for this BMP. as of 2004

Coverage Year	BMP 14 Data Submitted to CUWCC	Exemption Filled with CUWCC	ROR Ordinance In Effect	Exhibit 6 Coverage Requirement (AF)	Toilet Replacement Program Water Savings* (AF)
1998	Yes				9.23
1999	Yes	No	No		13.87
2000	Yes	No	No		24.16
2001	Yes	No	No		35.17
2002	Yes	No	No		50.60
2003	Yes	No	No		69.50
2004	Yes	No	No		88.49
2005	No	No	No		
2006	No	No	No		
2007	No	No	No		

*NOTE: Program water savings listed are net of the plumbing code. Savings are cumulative (not annual) between 1991 and the given year. Residential ULFT count data from unsubmitted forms are NOT included in the calculation.

BMP 14 COVERAGE STATUS SUMMARY:
Water supplier is meeting coverage requirements for this BMP.

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	(AFY)	Savings (AFY)
1998	5.98	2.42
1999	5.74	2.77
2000	5.51	3.10
2001	5.29	3.43
2002	5.08	3.73
2003	4.88	4.03
2004	4.68	4.32
2005	4.50	4.59
2006	4.32	4.85
2007	4.15	5.11

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Appendix G

Public Hearing Notice

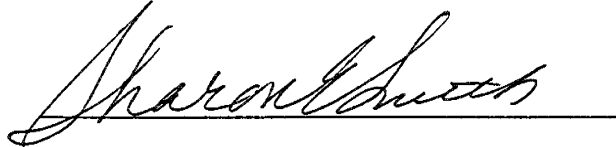
NOTICE OF PUBLIC HEARING OF THE
TRABUCO CANYON WATER DISTRICT TO
RECEIVE PUBLIC COMMENTS REGARDING
ITS 2005 URBAN WATER MANAGEMENT PLAN UPDATE

NOTICE IS HEREBY GIVEN, pursuant to Water Code Section 10642, that the Trabuco Canyon Water District invites the community to attend a public hearing regarding the adoption of its 2005 Urban Water Management Plan Update.

The draft Plan Update is available for public inspection at the District office during the normal business hours of 7:00 a.m. to 4:00 p.m. The draft Plan Update will be discussed and public comments will be received at the following time and place.

WEDNESDAY, NOVEMBER 16, 2005
7:00 p.m.
(or as soon thereafter as the Agenda permits)
Trabuco Canyon Water District
32003 Dove Canyon Drive
Trabuco Canyon, California 92679

Attendance is open to the general public. For more information, or if you would like assistance in presenting your comments to the Board at the public hearing, please contact the General Manager, Mr. Don Chadd, or the District Engineer, Mr. Hector Ruiz, at (949) 858-0277.

A handwritten signature in cursive script, reading "Sharon E. Smith", written over a horizontal line.

By: Sharon E. Smith
Secretary/Treasurer
Board of Directors

STATE OF CALIFORNIA,)
) ss.
County of Orange)

Oct. 28, Nov. 4, 11, 2005

November 11, 2005

Alice Kuen
Signature

PROOF OF PUBLICATION

Proof of Publication of

4-1233

Appendix H
Public Minutes and Comments on the Draft UWMP

REGULAR MEETING OF THE BOARD OF DIRECTORS
TRABUCO CANYON WATER DISTRICT

WEDNESDAY, NOVEMBER 16, 2005
32003 DOVE CANYON DRIVE
TRABUCO CANYON, CALIFORNIA 92679

ITEM NO. 1G. PRESENTATION OF DRAFT 2005 URBAN WATER MANAGEMENT PLAN
(TRANSCRIPT OF PROCEEDINGS)

APPEARANCES

BOARD OF DIRECTORS

CORINNE LOSKOT, President
GLENN ACOSTA, Vice President
MATT DISSTON, Director
JIM HASELTON, Director
MIKE SAFRANSKI, Director

TCWD STAFF

DON CHADD, General Manager
HECTOR RUIZ, District Engineer
SHARON SMITH, Secretary/Treasurer
ROBERT ANSLOW, Legal Counsel (Bowie, Arneson, Wiles & Giannone)

ALSO PRESENT

GRANT HOAG, Brown and Caldwell

ITEM NO. 1G. Mr. Hector Ruiz, District Engineer, stated that a Public Hearing to receive Public Comments is required prior to the submittal of the final 2005 Urban Water Management Plan (UWMP). He introduced Mr. Grant Hoag, Project Manager for Brown and Caldwell; the District contracted with the firm to provide oversight of the UWMP.

Mr. Ruiz provided a PowerPoint presentation highlighting the Executive Summary from the draft UWMP. He discussed the UWMP background and explained the changes in the planning effort over the past years and staff's participation in workshops and receiving assistance from Brown and Caldwell.

The purpose of an UWMP is to evaluate water demand and water to meet current and future growth. The reliability of the water supply during normal and dry weather periods - single dry year and multiple dry years - must be addressed as well. Other purposes include addressing Best Management Practices, methods for conservation, the Water Shortage Contingency Plan, and

1 water quality impacts. An UWMP is required to be eligible for drought
2 assistance and funds administered by the Department of Water Resources.

3 Benefits were reviewed. Benefits include the document being used as a:

- 4 • Long-range planning document for water supply and reliability
- 5 • Foundational document and source of information for Water Supply Assessments
- 6 • Source of data for development of a regional water plan
- 7 • Reference source document for the City of Rancho Santa Margarita and County of Orange to update their General Plans
- 8 • Component of integrated plans (Prop 50)

9 Mr. Ruiz explained the layout of the draft UWMP and the District's
10 service area and facilities. He stated that the District's population,
11 estimated to the year 2030, is fundamental to the plan. The population
12 estimate was derived through a number of references and source documents.

13 The water demand and supplies for normal water years to the year 2030
14 were reviewed. Staff projects the need for 6,638 acre feet of water in 2030.
15 Mr. Ruiz reviewed the District's total purchased annual capacity of 7,240
16 acre feet of wholesale water supply, the groundwater sources and
17 reclaimed/recycled waters.

18 The draft UWMP assumptions were discussed. Mr. Ruiz stressed that
19 water use is the projected total annual average water demand; peak demands
20 (peak day and month) are not projected in an UWMP. Rather, peak demands
21 would be met by system reservoir storage and operation.

22 Factors that can significantly impact supplies include: water
23 reliability, quality, conservation and shortage. The Municipal Water
24 District of Orange County (MWDOC), the District's wholesale supplier,
25 conducted a reliability assessment which indicates that only climatic factors
26 would affect supply reliability. MWDOC based its analysis on available
27 historical hydrology between 1922 and 2004 and determined that the single dry
28 water year equates to the 1961 hydrology. The multiply dry water years are
1959 to 1961. MWDOC accounted for a decrease in local supplies and an

1 increase in imported water supplies during dry water years. MWDOC concluded
2 that the region will have sufficient supplies to met the District's imported
3 water demands under every evaluated scenario through 2030.

4 MWDOC also concluded that current management strategies have accounted
5 for all known and foreseeable water quality impacts, and no water quality
6 issues are anticipated.

7 Mr. Ruiz stated that the District has been actively participating in
8 and reporting Best Management Practices (BMPs) since 1991. The District's
9 new Conservation Encouragement Rate Program (CERP) which encourages customers
10 to conserve water and reduce excessive use was discussed in the draft UWMP
11 along with the SmartTimer Rebate Program.

12 Highlights of the District's 1992 Water Shortage Contingency Plan, the
13 regional planned water supply projects, and the historical local groundwater
14 productions were provided.

15 Mr. Ruiz summarized the draft UWMP, concluding that the District's
16 projected water demands, on an annual average basis, are expected to be
17 reliably met through a reliable imported water supply from MWDOC, local
18 groundwater supplies, optimal use of reclaimed and recycled water, continued
19 application of BMPs, and implementation of the CERP. Mr. Ruiz also stated
20 that the final numbers may change slightly, pending more information from
21 MWDOC.

22 The necessary steps to adopt the final 2005 Urban Water Management Plan
23 were provided to the Board and public.

24 The Board commented. Director Disston stated that he is sensitive to
25 how the data might be used relative to either cost burdens or water
26 allocations in the future. Conversation took place regarding a water
27 challenge relating to Castaic Lake. President Loskot asked how the supply
28 and demand compared to prior years. Mr. Ruiz responded that during dry
weather the District will need to purchase about five percent more imported

1 water. Vice President Acosta asked if the document will be posted and if
2 UWMPs of other agencies will be available. Mr. Chadd responded that the
3 Executive Summary will be posted on the District's web site. He also stated
4 that the District is exploring the possibility of operating its water
5 treatment plant at peak capacity throughout the year at the request of Santa
6 Margarita Water District. Director Safranski stated that the draft UWMP is a
7 compliment to the District's Master Plan and commended staff on their
8 efforts. Director Haselton stated that he is also sensitive to how the
9 document might be used in the future. :

10 Mr. Grant Hoag of Brown and Caldwell addressed the Board and stated
11 that his firm reviewed the plan to verify that it would meet the legislative
12 guidelines. He stated that the District is in a very good water position
13 compared to other agencies in other areas of the State.

14 PUBLIC HEARING TO RECEIVE PUBLIC COMMENTS

15 President Loskot announced that this was the time and the place to
16 receive Public Comments relating to the Draft 2005 Urban Water Management
17 Plan.

18 President Loskot opened the Public Hearing at 8:00 p.m.

19 There were no Public Comments, no written comments were received, and
20 there were no further comments from the Board.

21 President Lokost closed the Public Hearing at 8:01 p.m. and expressed
22 gratitude to District staff and the consulting firm for their efforts.

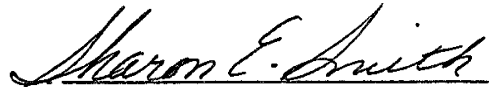
23 MOTION: A motion was made by Director Disston and seconded by Vice
24 President Acosta to receive and file the presentation
25 relating to the Draft 2005 Urban Water Management Plan and
26 directed staff to agendize the adoption of the Final 2005
27 Urban Water Management Plan at the December 21, 2005
28 Regular Board Meeting. The motion carried 5-0.

SECRETARY'S CERTIFICATION

I, Sharon E. Smith, do hereby certify:

That the said hearing was recorded by me in shorthand at the time and place therein stated and was thereafter reduced to print by me.

Witness my hand this 21st day of November, 2005.


- SHARON E. SMITH
SECRETARY/TREASURER
TRABUCO CANYON WATER DISTRICT

Appendix I
Trabuco Canyon Water District
Organizational Chart

APPENDIX I
 TRABUCO CANYON WATER DISTRICT
 ORGANIZATION CHART
 JULY 2005

